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University of Pennsylvania
Lectures On Surgery By
Philip S. Physic & John S. Kersey.

Taken by
James P. Butler

And copied by
Wm. F. Irwin Esquire.

John

University of Pennsylvania

Lectures On Surgery By
Philip S. Physic & John S. Kersey

Taken by
James P. Butler and

Copied by
Wm. F. Irwin in the Sessions
of 1799, 1810, And 1811

1799
Ackd. 8/14/1899

John Brown

John

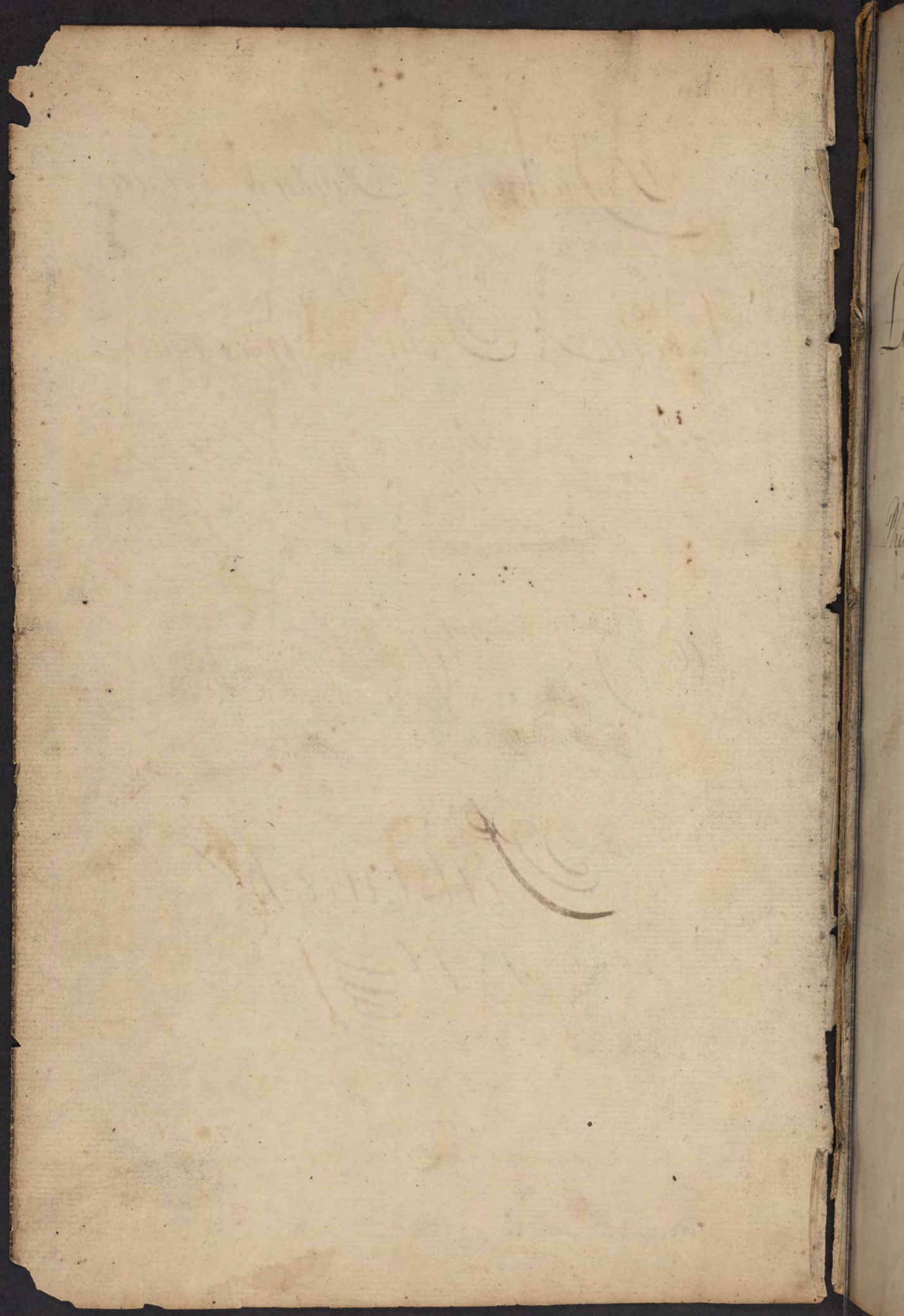
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Oct. 11. 1800

Pittsburg
1810

Presented to Dr. Jno. M. Keating
by his friend J. J. Barker
Phila. Aug. 1. 1889.—



University of Pennsylvania.

Lectures on Surgery.

By

Philip S. Physick and John S. Dorsey.

Taken, by

James R. Butler.

In the Sessions
of

1809, 1810, and 1810, and 1811.

And

Copied by W^m F. Swin

11th March 1844

Dear Sir

Yours faithfully

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Book P. 3

Lecture 1st

Gentlemen

I shall commence this lecture with some remarks on Inflammation. A knowledge of this subject; is highly essential to the Surgeon: it is true that Inflammation is sometimes necessary; but in most cases it is too violent. Inflammation sometimes cures ~~some~~ disease; for instance we excite inflammation, after evacuating the water in Hydrocele, and thereby cure the disease. Inflammation, is therefore, very properly divided into two kinds, viz, Healthy & diseased. First of the healthy Inflammation, When Inflammation is about to commence in a part of the Body, preternatural excitability takes place; & parts which in health have little sensibility, when inflamed are extremely sensible; as Ligaments, Tendons, Bones &c. If the part affected be the skin, itching takes place with redness, and preternatural heat added to a throbbing pain. If inflammation seizes on an organ, the functions are impaired. The remote causes of Inflammation are Chemical, and Mechanical. The Chemical causes are heat, cold and acrid substances &c. The Mechanical causes, are Lacerations, Bruises, Cuts &c. The inflammation in some cases is not immediate, but is put off, two, three, ten, twelve, & in some cases twenty hours. The same remote causes produce Phlegmonous inflammation, in one constitution, and in another Erysipelatous. Doct^r E. Smith says, the same action which produces

Erysipelatous inflammation on the skin, takes place in the cellular membrane; & that the inflammation there is Phlegmonitous; but this is not true; for if it was, after performing amputation, we should have Erysipelatous inflammation on the skin, Phlegmonitous in the cellular substance, and that kind of inflammation, which occurs in Rheumatism, in the Muscles. Fever sometimes occasions inflammation and supuration, in what is called critical abscesses. The effects of the remote causes, are very much influenced by habit. Manual labour inflames the hands of those not accustomed to it; but produces no inflammation in the hand of one accustomed to it. — Inflammation may be divided into three stages; First the Adhesive Inflammation, because the parts in this are disposed to adhere. Secondly, The Suppurative, in this the vessels secrete Pus, and Thirdly, the Ulcerative; because the formation of Ulcer is the consequence. Of Adhesive Inflammation. This originates in the smallest vessels; more blood circulates through an inflamed part, than did in its natural state; & the action of the vessels, as, also, their diameters are increased: This is proved by the following experiments of Mr. John Hunter, he froze the ear of a Rabbit & thawed it, by which great inflammation was produced. He then killed the Rabbit & injected the Ear, that had been frozen. The other dried transparent, a proof, that the ear that had been inflamed, had its vessels preternaturally distended. The swelling that attends inflammation, is owing in part to the increased diameters of the vessels, and in part

to the extravasation of coagulable Lymph and serum. The pain in inflammation, Mr. Hunter says, is owing to a spasm-
dic action: to the touch, the heat of an inflamed part, is
apparently increased; but experiments with Thermometers,
prove that the heat is not increased; or very little by
inflammation. The substance, secreted by the vessels in Ad-
hesive Inflammation, is coagulating lymph, or serum, &
a portion of red globules, & this is poured out in the
cellular membrane, and is the bond of union, between
divided parts. The effects of inflammation on the consti-
tution are various. When the Inflammation is small
and situated externally in a fleshy part, it has little
or no effect on the constitution: But if it is situated
in tendinous or membranous parts, it produces
violent effects & generally a Symptomatic Fever.
Adhesive Inflammation, terminates three ways,
First, by Resolution, Second, Suppuration, Third,
Gangrene. First. Resolution is sometimes brought
about by the parts becoming Schirrhous. Second,
by large productions of serum, as in the applications
of blisters. Probably it ends in this way in Hydro-
cephalus internus, Hydrothorax, and Hydrocele.
Third, by substances, spontaneous Hemorrhage. I
have seen an inflammation of the Eye, cured speedily,
which had resisted all the Antiphlogistic regimen.
The Hemorrhage took place in consequence of the
rupture of a small artery, on the internal surface
of the Cylid. If inflammation is not resolved in
some of these ways, Suppuration will take place.
In order to prevent this, remedies that will favour
resolution are to be used. But there are some cases

where remedies for resolution, are not to be used; as when a wound occurs in warm weather, ~~where~~ ^{where} should not use them for ^{fear of} preventing inflammation altogether, and thus bringing on Tetanus. 2nd When inflammation comes on in a fever; for fever often terminates this way by suppuration. But when we are afraid of destroying an important part by suppuration, we should by all means use remedies for resolution. The Cure of Inflammation. The

first indication is to remove its remote causes, 2nd to abate the inflammatory action of the vessels. Under this head there are two classes of remedies to be used. Such as act on the Constitution and Local remedies.

Of the first, Low diet is an important remedy. 2nd Blood letting; - This is useful in two ways, it empties the Blood vessels: Again the Blood vessels being emptied, have necessarily to contract to the blood, and in this way produce a new action. As a third general remedy Purging is to be employed. ~~It is~~

This is sometimes inconsistent; as in cases of Fracture. In such cases gentle laxatives only are to be given; & Blood letting substituted. 4th Neutral Salts, or Sal. Glub. tituli &c 5th Rest, this is of immense consequence. The Second Class, consists of Local Remedies. These are Cupping & Scarifications; in this way, drawing blood directly from the part affected

2nd Cold applications; These are only to be used when the heat of the inflamed part is disagreeable to the Patient, but when this is not the case we may do an injury by using them. 3rd R. Opium sweet oil &c. 4th Fomentations & Poultices.

The Poultice may be either Simply, as of Bread

Milk or of Flaxseed compounded with R. Opri. R.
5th The application of a Blister over the inflamed part, or near it. This is an excellent remedy and is attended with good effects in most cases; for instance, in cases of inflammation which occur in warm weather. By applying a Blister & preventing Tetanus. The good effects of Adhesive Inflammation are many: it produces a union of the divided parts. Cysts are formed around extraneous substances by it, and in cases of Abscesses in the Liver, it forms a sack which prevents the Pus from passing about in the Cellular Membrane.

Lecture 2nd

We proceed to treat of the suppurative state of Inflammation. When the Adhesive inflammation fails of making a cure by resolution, the Suppurative inflammation takes place. We have been told to guard against exposing the wounded parts to the air. Surgeons are so very apt to have this in view, that they neglect the proper application of bandages. Air is perfectly innocuous. This was first discovered by Mr John Hunter. But as Air possesses an irritating quality or property, how does it happen that there is no Inflammation in Emphysema? To ascertain its effects, - I made an Experiment upon a Kitten, by injecting air into the cavity of the Thorax, and closing the wound. In three days the animal was killed. No difference could be discerned between the cavity into which air had been inject-

ed, and That, in which, it had not been introduced. The
beginning of Suppuration is attended with pain, and, a
color of the skin takes place. Fluctuation is also observa-
ble. It is now what may be termed an Abscess, which
may be defined a circumscribed Tumor containing
Pus. Abscesses are often attended with rigors and
clammy sweats. - Which symptoms are removed by
evacuating the Pus. If the pain is very great it
may be relieved by Opium; and this rendered more
effectual by adding to the Opium small nauseating
doses of Emetic Tartar. In a fatal termination
of Suppuration, there is generally a superintention
of Hectic Fever. This frequently comes on when
abscesses do not heal readily after having been
opened but more certainly comes on if the
constitution be weakened; for the whole system
sympathizes with the diseased part. Hectic
is attended with a small weak pulse; and as soon as
sleep takes place, profuse perspiration comes on.
The urine is high coloured and deposits a
sediment and towards the close a Diarrhoea
takes place. It was supposed, by Dr. Cullen
and his contemporaries, that, the absorption of Pus
gave rise to Hectic Fever; but it has been clearly prov-
ed by Mr. John Hunter that Hectic fever, does
not depend upon an absorption of Pus, but is
produced by the System sympathizing with
affected parts. His objections to Cullen's opinions
are the following. "Hectic Fever is not frequently

produced when there is very extensive inflammation. 2nd
In a white swelling of the knee, Hectic Fever is not in
proportion to the Suppuration, and of course to the
absorption of Pus. For frequently large Abscesses are discus-
sed, the Pus absorbed and yet no Hectic Fever takes
place. 4th The Hectic Fever is sometimes cured or
relieved by Issues and these add to the suppurating
surface. These Issues are frequently made round a
disordered Joint such as the knee, or Ulcers of the Leg.
On Amputation, the Symptoms of Hectic are immediate-
ly removed; yet there is a formation of large quantities
of Pus around the Stumps. Hectic Fever most com-
monly comes on from suppurative inflammation
attacking a vital part: It is not found so frequently
to accompany the suppuration of a muscular part.
When very great pain attends suppuration, Opium
may be given, with Gum Camph to promote perspira-
tion. Practices of Bread & Milk, or of a linseed
Oil should be applied warm to the part. They
are soft & moist & accommodate themselves to the
shape of the part diseased. The most prominent
part is the place for opening. The best plan is to
leave the opening to nature. This is done by the
absorption of parts beneath the skin, and the parts
beneath losing their life & sloughing away, when
this takes place the opening is colorably large.
Thus leaving Nature to herself, disposes all things to
go on well; but when required to be assisted by art,
some precautions are necessary. First do not open

an abscess until the fluctuation be perceived & then
let the opening be made at the point of fluctuation.
2nd Be not too precipitate, when nature is slow in opening
the part under the fluctuation, or in using medicin-
es to prevent it. For there are few medicines
that expedite suppuration, Stimulating app-
lications will generally be injurious. Rasccherine
applications & applied by plasters are of little advan-
tage, except by moistening the part. 3^d When
an Abscess is formed in the cavity of the Thorax,
Abdomen, or within the Cranium or, over Joints, it
should be opened as soon as possible, lest, the matter
should be discharged within those cavities.
If an Abscess forms & there is danger of respiration
being impeded (as a Suppuration of the
Tonsils &c) It should be immediately opened,
if practicable. In Paronychia the Pain is
immediately removed by laying open the Finger.
I knew a Man, who was affected with periodical
pains in the Head, occasioned by an Abscess
in his Leg! By an opening being made into the
abscess, the pain was completely removed. I have
twice seen all the symptoms of Typhus Fever
produced by an Abscess of a small size, seated
near the abdominal ring. In the first case, the
patient died, owing to our ignorance of the
cause of the disease. In the other case, the
abscess was opened, and the Patient recovered.
A similar case was known in an Abscess of the Hyella.

4. When an Abscess is seated in the Face an early opening should be made to prevent deformity. There are two ways of opening an abscess; by Incision and Caustic. The former is to be preferred, tho in some cases, from the aversion of Patients to the Knife, Caustic must be used: here then a Layer of Lapis Stipticus may be applied to the part, for the space of 8, or 10 minutes, the part it touches will soon slough off, & give vent to the Pus. When the Pus is evacuated, the Abscess should be treated as a common sore. Abscesses sometimes cease in their progress & pus is absorbed: - Emetic & evacuating doses sometimes produces the same effect. Buboos have been absorbed, by the use of Emetic's. I have seen the same good effect from Blisters, Bleeding and Purgings. Diseased Joints have been cured by promoting inflammation. Ectetic fever is sometimes cured by promoting suppuration, Blisters promotes absorption by their irritation. I have known a collection of Pus in the Anterior chamber of the Eye, absorbed by the use of Bleeding, Purgings, - the Antiphlogistic regimen, and the exclusion of light from the Eye. Pus when taken from a healthy sore appears of a straw color, transparent, with whitish coloured Globules remaining in it. Inodorous when cold, but when warm it has a peculiar smell, well known to Surgeons. It is specifically heavier than water, and readily miscible with cold.

water, but readily soluble in warm water. It does not separate on cooling. It does not coagulate by heat, but may be evaporated by dryness. By Chemical processes it yields the same products as Blood & Gelatinous matter. It is distinguishable from all other fluids of the body, by being coagulated by a Solution of Sal. Ammon. It is said to be of a sweet taste & not readily purified. The time necessary to form Pus, being different according to circumstances. I have known it formed in the Urethra in 8 hours after passing a Bougie into it. It was the opinion of former Surgeons that the matter or disorganized parts of a Tumor together with the extravasated Blood, or Lymph, were changed by a fermentative process, into Pus: But Mr J. Hunter has clearly demonstrated, that Pus is formed by the Blood vessels of a tumor, or inflamed part, or the surface taking on the secreting action of a Gland; and that Pus, is, as much a Secretion, as Bile &c. and not the effect of a Fermentative process.

Ulcerative Inflammation. In this the whole or part, of the external covering is lost, or destroyed by absorption. Sometimes it takes place from the pressure of an Abscess, by the Pus. The Ulcerative, most frequently takes place after the Suppurative, and again - Suppurative inflammation takes place after the Ulcerative, as in Case of Venereal Chancre. Pressure has produced Ulcer-

ative, without suppuration, or rather inflammation. The sensations accompanying Ulcers is rather a soreness, than pain, for pain is not a necessary attendant. If the ulceration of a part be slow, there is little or no pain, as in Erophala, if it be quick there is sometimes pain. We shall say more of the - Ulcerative inflammation, when we come to treat of Ulcers in particular. Erysipetulous Inflammation. This is generally preceded by Shivering & Fever. Its seat is in the Cutis Vera. The Skin first becomes of a bright Scarlet colour, but afterwards of a dark hue; a discolouration of the Skin can be produced by pressure, but the colour soon returns. It spreads very much, and frequently when it is getting well in one part, it has just commenced in another. The Skin is smooth and shining, and a redness appears to end abruptly. The pain attending this inflammation, is not very acute, but rather of a burning kind. When in the Buttocks it is attended with intolerable itching. The Tumefaction in this is less than in the Adhesive Inflammation.

It differs from the latter by the Extravasation of Serum, instead of Lymph, and when it is deeper than the Skin by Ulceration. When it extends to the Cellular membrane, gangrene is often the consequence, because, the membrane is unable to assist in the union, as in the Adhesive: This takes place most frequently in the Buttocks - When Erysipelas attacks

the face it does it suddenly causing great swelling
sometimes, so as to preclude light from the Eyes. The
swelling is not distinct & circumscribed. It is of a
bright scarlet, and sometimes of a Purpur colour: small
pustules are found upon it, which contain a trans-
parent fluid, which excretes when the vessels burst,
sometimes the Inflammation terminates in Gangrene.
When it terminates favourably, it is in about ten, or
twelve days; and the vesicles fall off, like branny
scales. The remote causes of this, are, the same as
in other inflammation, sometimes it comes on without
any evident remote cause. The treatment to be used
is the Antiphlogistic, though in England they
treat it with Bark, instead of the above remedy.
The Linctices, & Uctions substances, usually applied
have an evil tendency. The best Topical applica-
tion is Wheat, or Rye flour. Some authors have
recommended Blisters in Erysipelas, and say the
application of these to the part will put an
end to the Inflammation. I have tried this practice
several times & with the happiest effects. I was
called to a Man sometime ago - with Erysipelatous
inflammation on his foot & Leg, extending to his knee.
I applied a Blister all around his Leg, but the Blis-
ter did not extend as far as the Inflammation, that is
the upper edge of it did not stop its progress, it
extended up to the Hip. I then applied a Blister
from his knee to his hip, & completely cured him.

This certainly caused a great deal of pain, but it put
a stop to the inflammation and completely cured it.

This is certainly greatly in favor of the Practice,
for this was as bad a case as I ever saw. In
Erysipelatous inflammation, when suppuration takes
place, the skin should be opened freely, or
the Pus will travel extensively through the
cellular membrane. Oedematous Infl-
ammation. It is probably the case that this
and the adhesive are originally the same.

It is difficult to say to what depth it goes, from
the swelling which accompanies it. I had a
patient aged 36 years, with Oedematous infl-
ammation of the Leg. I punctured it at the knee.
Many purple spots came on, the parts sloughed off,
and left the knee bare, amputation saved the
patient's life. The application of Bandages
is the best local application, that can be used,
in this inflammation. The inflammation that pro-
duces Carbuncles, they appear more frequ-
ently in old than in young persons, and dang-
erous in proportion to their number they
should be treated in the same manner
that we treat mortification from Infl-
ammation.

Lecture 3th

Gentlemen.

I go on next, to speak of Mortification. This is the complete death of the parts. Gangrene is that state of the parts which immediately precedes Mortification. Mortification is of two kinds. The 1st comes on without any inflammation, and the 2nd is preceded by inflammation. The causes of the 1st kind are contusions, Ligatures upon the Blood-vessels; or where the parts mortify on account of the languor of the Circulation, and weakness of life in them; induced by universal debility in the Patient. It frequently occurs in aged people. In this case the mortification of the lower extremities (as it is there that Mortification, in such cases generally appears) seems to be connected with an Obstruction of the Arteries; for I found them so myself, in a case where I amputated. Excessive heat, or cold are causes of this kind of Mortification, also - The second kind of Mortification, is when it is preceded by inflammation. There are two kinds of this; the first is where Mortification is produced by violent Inflammation: the second kind is where there is something peculiar to the Inflammation; independent of its violence. I suspect that in

every case where Mortification takes place in consequence of Inflammation. That, there is something peculiar in it: for if this were not the case a Blister (which is a powerful Stimulant) would increase the disease, instead of curing it. Intense heat or cold produces mortification. In mortification the heat & sensibility of the parts, become lessened. The part first becomes of a Livid colour, then purple; and lastly completely black. The cuticle is separated by an infusion of Bloody Serum; the part, at the same time, discharging a disagreeable odour. The dark purple colour of a mortified part is carried on in the following way. Blood is forced into the dying vessels, by the action of the living: Then the dying vessels being unable to propel the blood, on, in its circulation, the Blood coagulates in them and forms the dark colour. This is proved in the following manner. If you cut a piece of mortified flesh out and macerate it in water, you can get all the Blood out of it, and render it perfectly white. Mortified parts should never be scorified, as it is no use whatever, & is frequent injurious. Amputation should never be performed while mortification is progressing, for in such cases, the System labours under such a disposition to Mortify, that it will in almost every case seize upon the

Causes. Mortification can take place without Inflammation. 1st By a general debility of the System, rendering the life of the part languid. 2nd By pressure so as to abstract the Circulation; as upon the Hip joint &c. When Patients have been long confined to their Beds, 3rd By taking up the large artery of a limb, and thus stopping the usual circulation of the part, 4th By intense Heat or Cold producing a death of the Part.

Treatment of Mortification. Scarifications should not be made, except where particularly recommended hereafter. The treatment is divided into General & Topical remedies.

First of the General remedies. If the Inflammation symptoms run high, the Antiphlogistic remedies are to be used: But if the Patient appears languid and appears to labour, or rather actually labours under general Debility, cordial Diet is to be used; & if the Patient has been accustomed to drink wine, he is to be allowed the moderate use of it, with the Toruvian Bark. If the pain is great it is to be abated by the use of Opium.

Topical Remedies. A warm Bread & Milk Poultrice spread on light, is the best application. Some have recommended Russian Bark to be mixed with the Poultrice. The Marine Acid - fermenting Poultrice with & without Charcoal, Carrot Poultrice, R^h Turpentine &c.

have all been recommended; but these should not be used until the part is completely dead. In the inflammation which produces Carbuncles, the treatment is the same as in Mortification preceded by violent Inflammation. In Carbuncles, the Mortification generally depends upon some peculiarity of the Inflammation independent of its Violence. Scarifications are attended with great advantage in this kind of Inflammation, as they generally produce the Adhesive inflammation. Some years ago, I thought it probable a Plaster might be of service in arresting the progress of Mortification, & consequently, as soon as I had an opportunity, I made use of it; but the mortification was so extensive in this case, the Patient died. But I was pleased with the effects it appeared to have, Dr. Rush visited this Patient with me; and in the course of a short time he used it, in the case of a man, who had a mortification of his Foot and Leg; with complete success. This Man, when his Leg was in a depending situation; was easy: But when in a horizontal position, it gave him great pain. This is common in Mortification of the Legs and is owing to this:— when the Legs is in a Horizontal position the circulation goes on better than when it is in an erect posture and consequently when the Blood vessels are distended

with Blood. The Convulsive action of them is somewhat impeded; and, it is, this convulsive action which induces pain. On the same principle a Pain in the Head caused by tying a Bandage, tight around it. Although the application of a Plaster to a Mortifying part, when the Mortification is preceded by inflammation, is attended with the happiest effects. I would not recommend you to use a Plaster in Mortification when it is not preceded by inflammation. I believe a Plaster in such a case would hasten the Mortification. When you suspect that Mortification is about to take place, in a part, a good test, to ascertain it, is to make pressure on the part, with your fingers: if Mortification is about to take place, the part will remain white some time, owing to the return of blood being very slow. In like manner when the vessels of the Part are completely dead, by the same test, you are not able to press the blood out; owing to its being coagulated. To prevent the Fætid odour, I generally wash the mortified part with equal quantities of Nitric Acid and water. The Carrot & Charcoal Poultice is sometimes used for the same purpose. To prevent Mortification when Poppinative inflammation follows the Erysipelas. The Skin should be scarified to let the Pus run out.

When Mortification is induced by cold, a pale colour is first perceived; It is then changed to purple with tumefaction and pain of the part, and lastly to a black colour. To prevent this when a part has been exposed to intense cold, it should first be rubbed with snow, and then bathed with Spring water. In the Mortification which occurs in the Toes & Legs of old people.

Mr. Pott, who describes this says, that a Bread & Milk poultice, or a Linseed, should be applied to the part, and the internal use of Opium should be the Practice.

Lecture 1th.

Gentlemen.

We come next to speak of Particular Abscesses, and first of Mammary Abscess. It's very seldom that this is the office of the Surgeon at first: (for every old woman, has some Specific for it, which she tamper's with, until it is too late.) The Pain at first is obscure; when suppuration commences it is excruciating. Sometimes the Inflammation attacks the whole Gland at once, and when this is the case, the secretion of Milk is entirely put a stop to. Sometimes only a part of the Gland is affected, and then the secretion of Milk is

diminished, and Sometimes the Cellular membrane,
investing the Gland, is alone affected & the secretion
of milk goes on as usual. A chilly fit, usually
precedes the Abscess, by the Inflammation of
the Gland. The Breast becomes swelled and
painful, shooting pains are felt in the Axilla:
The milk runs off in small quantities & the Patient
is seized with restlessness and Fever. Women are
subject to inflammation of the Breast as long as
they suckle their Children: But it most frequently
occurs in the first three months after Parturition.
Suppuration is the most frequent result. I have
seen it terminate in Adema, which has been
attended with so much swelling as to hide the
nipple. When the Inflammation terminates by the
extravasation of Coagulating Lymph, and when
this is not then absorbed, a Schirrus is formed.
I have seen Schirri as large as the fist: They
are no ways cancerous, because they have
frequently yielded to the antiphlogistic
treatment. The ~~remote~~ causes of Inflammation
in the Mammas, are 1st Tight Bandages or
Lashes, 2nd External violence & 3^d permitting the
Breast to be much distended with milk;
and sometimes it comes on without any evident
remote cause. When the Glands become

indurated they never return to their natural size.
The Cure in the forming state is very easy; Ten, or fifteen
ounces of Blood are to be taken from the Arm, and
the Antiphlogistic plan persisted in. Another
Bleeding may be used, if the first does not succeed.
Leeches also should be applied to the part. The
Breast should be anointed with warm oil. The
patient should be in Bed, if practicable; if not, the
Breast supported by passing a handkerchief around
the neck. After the warm oil has been used a
while, a poultice of Bread & Milk, moistened,
with a Solution of Sacch. Saturni, should be appli-
ed. After this plan has been persisted in, if it
does not succeed, a Plaster should be applied.
Purges should be given frequently, Sal. Ann., and
vinegar, have been highly recommended; but they
are of no use. The application of Rubefacients
does, perhaps, little good. When suppuration has
taken place and the abscess points, it should be
opened, by a puncture with a Lancet and left open
by means of a Bougie. The Oedematous case which
came under my direction, was cured by Blisters and
mercurial frictions to the part. After the Abscess
has been opened, a Bread & Milk poultice, is
the best application to the part.

Of the Paronchia, or Whitlow

This disease is seated in the Fingers and is of three kinds,

- 1st When the true skin is only affected, 2nd When the Inflammation is deep seated in the Muscles and integuments of the fingers, 3^d Where the disease is seated under the Fascia of the Tendon; in the Periosteum of the Bone themselves. This is by far the most painful kind. There is not much swelling in the finger itself. But the arm sometimes is considerably swelled and the Pus, sometimes passes along the Tendon until it comes out at the annular ligament at the wrist and forms a Tumor there. Sometimes a caries of the Bone takes place, and Mortification ensues. When this is the case the Bone should be removed as soon as it becomes sufficiently detached. The Remote causes, are First a puncture of a needle &c. This, sometimes produces it, I have known it to be produced by the puncture of a Squirrel's Tooth, and lastly by the passage of a rope, swiftly passing thro. The hand of a Sailor, and indeed, anything that does violence to the fingers. Cure. The first kind is to be cured by a simple incision thro. the skin. The second kind - make a deep incision, and suffer the Hemorrhage to stop of itself: Then apply Ung. Citrin, or a Bread and

Milk Poulrice. The third kind: The incision is to be made down to the Bone. If the Bone is carious it is to be extracted as soon as it becomes; and if the sore becomes Fungous, escharotics are to be used. When this disease excites inflammatory symptoms or is very painful, the Antiphlogistic plan is to be followed. The common people are in the practice of dipping the affected finger in hot water. If this ever does any good it is as a Rubefacient. Spas Abscess. It is situated in the Cellular membrane, surrounding the Psoas muscle; and the Pus is contained in a Cyst formed in the cellular membrane, by the Adhesive Inflammation. Symptoms: are first pains above the Groin: sometimes though there is very little pain. The pain is increased on rotating the thigh, or by standing erect, hence the Patient generally goes with his body Bent. When the Suppurative inflammation has gone on so far, as that a large quantity of Pus is formed, a hernia makes its appearance on the upper & anterior part of the thigh. I have seen the Pus, however, discharged per Annum. This Tumor is rendered large and more tense, by the Patient standing in an erect posture, and rendered

soft by lying down; owing to the Pus returning to the abscess in the muscle, and that tends to press down the Diaphragma or contracts the Abdominal muscles, increases the size & tension of the Tumor on the Thigh, by pressing down the Pus; as Languishing, sneezing, coughing &c. The quantity of Pus varies, I have seen two quarts discharged from an abscess of this kind. The Boaz Abscess never opens into the Cavity of the Abdomen. But sometimes they corrode Blood vessels in their neighbourhood and cause a fatal Hemorrhage. This disease is sometimes mistaken for Hernia, or Puto; but the true criterion is the fluctuation of Pus. The remote causes are external violence of any kind & sprains, and causes which produce inflammation in the part, as cold &c. Cure. This may be attempted by Bleeding, Low Diet, cups applied to the loins. Purges to be given every day or two and a Plaster to the Loins. If suppuration takes place, the matter is to be evacuated. Here a question takes place whether the matter should be evacuated immediately, or whether the best practice is to make a Puncture Longitudinal with the Thigh, with a sharp Lancet into the Tumor, & as soon as the Pus is discharged the sides of the wound are to be united with Adhesive Plaster so that a union by the first intention

should take place. If this is not Practiced, the Opening becomes fistulous, and a new opening must be made in the same way, whenever the quantity of Pus formed anew requires it. It is not all to be evacuated at the same time, but at intervals of an hour. But when Puffuration is established, it is best to open the Abscess after Abernethy's plan. This is done by making a puncture first through the integuments with a Lancet and then to push it horizontally through the Cellular membrane & then into the Cist itself so as to form a valve & by two, or three evacuations to discharge the matter. I have tried this method and approve of it. I have not succeeded indeed in any Psoas Abscess, by this method of treatment, because all the cases that have come under my care, have been attended, with caries of the Lumbar Vertebra. But I have made use of this mode of opening in an Abscess extending from the Hip joint to the knee and with the happiest effects. Sometimes the Puncture will not unite by Adhesive Inflammation. Then the cavity most commonly inflames, and Fever is produced, which often terminates fatally.

Lecture 5th

Abscess of the Hip Joint.

This may occur at any age but most frequently at an early period of life. The symptoms of the beginning of the disease are obscure. There is first a weakness of the joint in walking - almost the first symptom is, the Patient, refusing to step. Pain is sometimes abundant, but not always and often not at the seat of the disease, but at the knee. This often deludes the Patient and Practitioner; and applications have been made to the knee, as the seat of the disease. The pain is not constant but comes on by fits, which last from 4, to 10 minutes. The Patient is often attacked suddenly with these pains, whilst at exercise &c, and manifests his distress by violent screaming, and these pains are worn off at night. Upon examining the Hip, it is found to be swelled, and pressure upon this part, or the great Trochanter gives pain. The Patient constantly stands on his sound limb, with only the toes of the affected limb touching the ground. By this position the spine is curved, and is often mistaken for a disease of the Spine. I once knew a case of this kind, treated with the application of Caustic, on each side of the spine,

as if the Spine were affected, the best way to distin-
-guish a curved spine, (produced by a disease of the
hip joint,) from a diseased spine, is to lay the
patient forward, so that his body may rest on
a Bed, or Table, and then if the Spine is not
diseased, we can make it perfectly strait, which
cannot be done if it diseased. Remote Causes. It
sometimes arises without any evident cause. But
it often follows blows on the Trochanter. Stumping
also produces it. If not arrested the disease pro-
-gresses. The Patient becomes more lame. The
motion of the limb is diminished, and upon an
attempt to walk, the Gait is irregular, owing only
to the motion of the Spine & knee. The Hip, being
almost immovable. Sometimes the Limb is suddenly
shortened owing to the Head of the Femur being
pushed off the Acetabulum, owing to a Tumor
forming in it, and then drawn up by the Muscles.
Sometimes, tho' in few instances, the length of the
limb is increased, probably from the weight
of the limb drawing it down, often the Head of
the bone is dislocated. This is called spontaneous
Luxation. The direction of the head of the bone
is generally upward & backwards, sooner, or later
suppuration takes place; and sometimes the
head of the bone and the Acetabulum also, be-
-comes Carious. Often when the head of the

bone is dislocated and not injured a new acetabulum is formed and admits of some motion. The Abscess at length opens at several different places and discharges its matter. Septic Fever comes on and Death ensues. Sometimes when the Cartilages of the head of the Femur & Acetabulum are absorbed, granulations shoot out, from the denuded bones & Ankylosis forms. It is unfortunate for the cure of this disease that the surgeon is not called in the beginning, owing, to the apparent trifling nature of the disease, because if taken in time it may be cured. A great variety of Practice has been tried in this disease. I shall not detail them, but shall make you acquainted, with that mode of Treatment, which I have found most successful. If you are called early in the disease, you are to begin the cure by taking 8, or 10 Oz . of Blood from the Patient: next Cathartic Medicines should be given every other day, for two, or three weeks. Sallap & Coen, Tart. next form the best purge, to be given in doses sufficient to produce, 4, or 5 Stools. You will be surprised to find how well Children bear so much purging. Rest should be very strictly attended to, as the least motion of the limb tends to keep a constant Oscillation. A Milk & Vegetable diet should be persisted in, &

lastly the warm Bath, this will be improved by its being
Salt water, or Prune. Issues & Caustics to the Hip,
have been used by some. I have given them a fair
trial and found no benefit from them. Leeches applied
about the Hip might be of service. I should have
mentioned before that Tumefaction is the most
proper term for this disease.


Wounds.

A Wound is a breach made in the Continuity of
soft parts, of a part communicating externally
and produced mechanically. Wounds are of two kinds
1st Incised, 2nd Contused; under the head of Con-
tused, I include, Punctured, Lacerated and
Gun Shot wounds. First of Incised wounds.

An Incised wound, is one, made by a sharp
Instrument. In wounds there is always an effusion
of Blood, and this is in proportion to the sharpness
of the wounding instrument: For in Contused wounds
there is very little blood discharged. Cheselden relates
the case of a Miller, who had his Arm torn off with
the Paupala, and the parts were so lacerated, the
Brachial artery bled very little, so little that the
man recovered. I once myself saw a Boy who had
his arm ground off in a Mill, between the Elbow &
Shoulder. The Hemorrhage in this case, was so
inconsiderable that the cloth wrapped about, was
scarcely discoloured. In Incised wounds the Spontaneous Hemorrhage is produced in the following

First the wounded vessel contracts, & secondly after the Patient has lost a great deal of Blood, fainting comes on by which, the Circulation is stoppt. A plegmat of Coagulating Lymph is formed in the extremities of the Blood vessels. But in contused wounds, the case is quite different, the stoppage of Hemorrhage is produced 1st By the vessel for some distance being killed so that it is not able to propel the Blood with so great violence. 2nd Vessels in the neighbourhood of a large artery or vein is lacerated, then Blood is effused and coagulates, and in this way forms tolerable pressure on the vessels. 3^d By the parts being dead, exciting the Blood to a more speedy coagulation, forming a Plug in the end of the bleeding vessels. In Incised wounds the first thing to be done is to stop the Hemorrhage. This is most conveniently done by applying the Finger to the bleeding vessel, until a Tourniquet is procured. In the application of the Tourniquet, if it is to be applied above the Elbow, if to the Lower, it should be applied above the knee; because in those places there is but one bone & more equal pressure can be made. The Hemorrhage being stoppt; the next thing to be done is to clear away the clot of Blood and extraneous matter from the wound by means of a Sponge dipped in warm water. After this, if the extremities of the Arteries can be seen, they are to be taken up, & a Ligature applied around them; But if they cannot be

drawn out conveniently a ligature is to be passed around the extremity of the Artery so as to enclose a portion of flesh. But the lower and upper extremity of the Artery are to be secured; as often by the Anastomosing of the artery the lower end of it will bleed, if not secured, after the Tourniquet is removed: But if the exact point of the artery cannot be seen, the artery is to be felt by its pulsations. The Tenaculum is to be pushed around it and tied by a Ligature, as above. The first time I operated for the Stone I was so unfortunate as to divide the Pudica Interna Artery. I could not see the ends of the divided artery, but by feeling the Pulsation, in applying my finger. I was enabled in this way to secure it completely stop the Hemorrhage: If the wound in the limb is so near the Body, that the Tourniquet cannot be applied it is of consequence to know that the Humeral artery can be compressed, when it passes over the First Rib, and the Femoral in the Groin as it passes out of the Abdomen. This prepure is to be made so as to secure the Artery by ligature. When the Artery can't be come at, the wound should be dilated; sometimes the artery can be compressed above the bleeding part, until clotted blood be formed so as to plug up the vessel and the Hemorrhage stopped. This was the case of a Boy last summer

a Patient in the Bonn^a Hospital; who stepped upon a piece of glass: the wound was not of great extent, but was very deep. Hemorrhage took place, which was with a great difficulty stopped. Great swelling took place, so that it was impossible to come at the bleeding vessel. Hemorrhage was finally put a stop to, by making pressure on the Anterior and Posterior Tibial Artery. The compresses were kept in their places by a Copper Ring covered with Flannel, and opened at one part, so that the ends might pass by each other & a Tourniquet over the whole. The pressure was made only on the arteries; so that no swelling was produced by impeding the circulation from the foot, through the veins. This was the form  of the ring, so that when the Tourniquet was applied the ends of it could not pass each other. It seldom happens that Hemorrhage cannot be stopped in some of these ways. But it is sometimes the case that it cannot, — for instance, wounds in the back part of the Mouth & Throat, which parts are out of reach. In these cases Dry lint, Burnt Sponge, Vegetable & Mineral Astringents are to be used; & if these fail we must have recourse to the ancient remedy, the Hot Iron, or Actual Caustery as it is called, small arteries will often heal of themselves, without a ligature. A few years ago I had a Boy under my care who in a Battle with a Schoolmaster, got a Penknife stuck in his ham. The first effect was great Tumeur

tion, with great pain & loss of very little blood. As soon as he could get home after the accident happened, he was put to bed and after some time fell asleep: In the morning the pain & swelling had subsided. He thought himself well & got up & walked about for some time. The tumefaction & pain returned & this was continued for several mornings. As soon as I was called in I pronounced that the Popliteal artery had been punctured; & that the swelling proceeded from the effusion of blood into the cellular membrane & this effusion distending the nerves caused the pain. He was kept in Bed, his limb somewhat elevated, in order to impede the circulation thro' the Artery & hasten it in the vein as much as possible. He was kept perfectly still, particularly the diseased limb. He lived on low diet, was bled & perfectly recovered in two, or three weeks. I know another instance of this kind, in a Physician of this City; who in getting bled, had the Artery punctured in such a manner, that the blood flowed directly from the artery into the vein, forming a Varicose Aneurism. He was treated nearly in the same manner as the former. In time, the punctured Artery closed and his arm got perfect by itself. In such cases, where we attempt to cure without taking up the Artery, we should not make severe pressure on the puncture in the Artery; because it disturbs the coagulating Lymph of the Blood, directly in the Puncture.

and in many cases is attended with ill consequences.

We should only bring the external parts of the wound in contact, and keep them so by Adhesive Plaster.

When great Hemorrhage follows a wound, and an Artery is supposed to be wounded, No Lint, Sponge, or Probes are to be introduced; - as they prevent or disturb the Coagulating Blood and prevent it from stopping the Hemorrhage. I once knew a man, who had received a wound in the Thigh, in which the Femoral Artery was punctured: it bled considerably, at length the Hemorrhage stopped, but, by the ignorance of the Surgeon in probing the wound, the Hemorrhage returned, which proved fatal: - whereas if it had been left to itself, the Patient, in all probability would have recovered. After the Hemorrhage is stoppt in some of these ways, the next thing to be done is to bring the sides of the wound in contact, or apposition & keep them so. Formerly Ligatures were used for this purpose. But, in almost every case, Adhesive Plaster spread on Linen or Leather. I prefer the former, for when leather is applied the ichorous discharge from the wound, rots the leather, and destroys its effects, will be found to answer every purpose, forming what is called the Dry suture. The strips of the Plaster, should be applied across the wound, at the dist-

ance of a quarter of an inch from each other, in order
to let out Pus &c which may form. In wounds of the
Extremities the limb is to be placed in that situation,
which will most probably favor the approximation of
the sides of the wound, by relaxing the muscles of
the part. For instance in a transverse wound in the
anterior part of the Thigh, the leg is to be kept
extended by a long splint placed on the Posterior
part of the limb, and the whole limb is to be bent
a little on the Pelvis. After the sides of the wound
are approximated, and the Strips of Adhesive
Plaster applied, a pledget of lint, spread with
simple Cosate is to be applied, & a compress &
Bandage applied over the whole. Union by the
First intention generally takes place in 48, or at
most 72 hours. After the wound is thus dressed,
if Inflammation comes on, Antiphlogistic remedies
must be used, If however, this does not take
place animal Food may be allowed. Wounds
made by Glass were formerly supposed to be pois-
onous, the fact is they contain Spicula of Glass
which are left in the flesh, such wounds should
be treated as contused wounds, in order that
Suppuration may remove the Spicula & we
should not use Ligatures, or Sutures where Ad.
Plaster will answer, First because sutures

produce great pain, 2nd They increase the extent
of the wound, & cause suppuration, in their course
3rd the sutures keep up perpetual irritation.

But wounds in depending parts, as the lobe of the Ear,
the Nose, Lip, Tongue &c. In some wounds of the
Scapula, in wounds of the Abdomen, and where an
operation has been necessary, on the Peritæum sutures,
in these cases, are indispensable. In wounds com-
municating with the cavity of the Abdomen; the
divided edges of the Peritoneum can be kept in
in contact in another way, than by suture, and if
not kept in contact, and united, that part will
always remain weak, and the Patient will ever
after be liable to Hernia, from that place, the parts
should not be put in complete contact; for when
this is the case, & Inflammation comes on, the parts
are rendered tense, and if this tension be great
the parts are apt to mortify. Of the Sutures
there are many kinds, I approve only of the
interrupted, and twisted sutures, which shall be
described hereafter. Ligatures, by which
we tie Arteries, are formed of a number of
threads made flat and generally waxed.

End of Lecture 3rd

Lecture 6th

Of Contused Wounds.

Contused wounds are such as are made with a dull instrument, and are of three kinds, 1st Lacerated, 2nd Punctured, 3rd Gun Shot wounds. Owing to the Contusion that accompanies these wounds, the Hemorrhage is generally considerable. In contused wounds accompanied with great pain & Irritation, Anodynes and small nauseating doses are to be given to produce perspiration & allay irritation. But if great Inflammation & Fever come on, antiphlogistic measures are to be pursued, as Bleeding, Purgings, Low Diet &c. The application to the part should be a simple Bread & Milk poultice. If symptoms of Gangrene, as Lividness or Blackness be perceived, Opium & Bark, should be given internally and a Blister applied to the parts. After the deadened parts slough off, granulations form, the sides of the wound are to be brought as near together as possible & retained so by adhesive plaster, in the same way, as in incised wounds. **Punctured Wounds.**

They are made deep in proportion to the external opening; and made with sharp pointed instruments. In these wounds the irritation is greater

than in Incised. They are of the nature of lacerated wounds. No Forceps or Forceps ought to be used. A moderate diet is to be enjoined & Anodynes exhibited, & an emolient poultice applied to the Part. It has been the practice of the Older Surgeons, to dilate all punctured wounds indiscriminately, but this is improper, there are some cases in which dilatation is necessary, and where it is proper it should be performed immediately, or not until suppuration has taken place. There are three circumstances in Punctured wounds demanding dilatations. The first, is where a large artery is wounded, in this case it will be proper & even necessary to dilate the wound, to get at the bleeding vessel, in order to secure it, and Second, where the constitution suffers, as Purpuration, great pain &c. In the case of a woman, who came under my care dilatation almost immediately removed Purpuration; which ensued from a Puncture in the thumb by a needle, and the case of a Boy who had struck a nail in his knee. Very excruciating pains were removed, by dilating the Puncture. Punctured wounds received in warm weather, are also to be dilated and to be treated with Stimulating applications & generous diet in order to prevent Tetanus.

Wounds of Particular Parts, and first of the
Palpebrae. In wounds of the Palpebra when there is no
loss of substance, the Ad. Plaster will be sufficient
to keep the sides of the wound in contact. If, on
the contrary, the Eye-lid be much injured, the Suture
is to be used taking care not to pass the needle too
deep, as to go through the Tunic Adnata; for if you
pass it through this, the Ligature will be in contact
with the Eye, and keep up constant irritation. If
inflammation comes on to any extent, Antiphlogistic
remedies are to be used, Cupping, or Leeches to the
part. At sometimes happens that the ball of the
Eye itself is wounded, and in such cases the Sight
is frequently lost. If any extraneous matter is lodg-
ed in the Eye, it is to be removed, the Patient
confined to a dark room, the Eye is to be closed,
Bleeding at the Arm, Cupping, Purgings, Bleeds,
Diets, Scarifications, to moderate the violent Infla-
mation, which generally occurs, in such cases, &
together with all these, the Eye ought to be frequent-
ly washed with an Infusion of the Bith of
Pasagras, or Milk & Water. I knew a Boy
who run the sharp point of a Penknife into
the ball of his Eye, & by rubbing it squeezed out
all the contents. The Case of Dr. Coxe's child, is
in the Medical Museum for 1805.

* Try the Eye with a Speculum, & remove the substance with a
Lancet.

wounds of the Cornea frequently excite violent inflammation. In the case of a Lady who came under my care, the Inflammation from the wounds of the Cornea, was so violent, that I used Fifteen bleedings from the arm, Cupped her, & had Leeches & Blisters applied to no purpose. I then gave Calomel, so as slightly to affect the mouth & this removed the Inflammation. Wounds of the Face. The Face is subject to every species of wounds, that have been mentioned. They require no particular treatment. They should be managed so as to avoid deformity as much as possible; For this purpose the sides of the wound are brought in complete contact, if possible, & kept so by Ad. Plaster. Sutures should not be used, when Ad. Plaster will possibly answer, for they leave a scar & thereby produce deformity. I have seen one on the side of the Face of a Young Lady (otherwise handsome) very much deformed, by Scars from Sutures. When the parts are contused a poultice is to be applied, & when the diseased parts slough off, and granulation forms, the parts are to be brought as near as possible to each other, & retained so by Ad. Plaster; in order to open the Cicatrix as much as possible. Wounds of the Lips

If there be an absolute loss of substance in the wounds stitches are absolutely necessary. But in Incised wounds Ad. Plaster will answer every purpose to keep the sides of the wound in contact. Wounds of the Tongue. They are so great sometimes as to divide the tongue: But these cases are very rare, I have

not met with more than three, or four cases of wounded
Tongue, in the whole of my practice. They most frequ-
ently occur in Children. Here the interrupted Suture
is to be used; and in the application of it, the Sides
are to be kept asunder by means of a stick; and
the Tongue if necessary drawn out if necessary with a
hook. The Patients aliment, should be altogether
or Liquid. Wounds of the Throat. These
most frequently occur in persons attempting their
own lives. When the Integuments only are divided
the accident is not of a serious nature. The sides
of the wound are to be brought into contact
& retained so by Ad. Plaster. But when the Larynx
or Pharynx or both are divided; the Injury is of
a serious nature. The first object is to stop the He-
morrhage (as well as to secure the Arteries) by
pulling ligatures on each of the veins, because
if this is not attended to, the Blood will be dischar-
ged into the cavity of the Trachea, and keep up
constant irritation & Coughing. Surgeons say that
even the Carotid Artery may be taken up, the
sides of the wound is small; Ad. Plaster may be
used, taking care not to pass the stitches near the
cavity of the Trachea, but only through the skin
& external integuments; for, if the thread penetrates
the cavity of the Trachea it will keep up constant
irritation. The sides of the wound are to be
kept a little open, to let the blood & other

discharges, pass out, which otherwise would fall
in the Trachea & cause irritation. When the
Pharynx is wounded, there is great danger, for the
motion produced by deglutition prevents the union
of the parts. To obviate this, a flexible tube is to be
passed through the nose into the Oesophagus, be-
hind the wound, so that nourishment may thereby
be conveyed into the Stomach. In this case the
Patient is to be supported by nourishing and
stimulating Pylsters. If cough comes on it is to
be obviated by Opium. The Pharynx should
first be joined by Suture, (when we use that at
all) & then the Larynx. But I believe that in
almost every case, the sides of the wound can
be kept in contact by bedding the neck for-
ward; so as to bring the Chin towards the Ster-
num & keep it so, with Ad. Plaster. I will now
read you a very interesting case, from the 4th
Vol. of the Medical Museum, # The Case
is related by Mr. Doct. Hork, Calcutta. Some authors have
doubted whether the Trachea & Oesophagus can both
be cut without the Carotids being divided. But
this case, & one I saw myself prove that they can.
I also saw the case of an Old woman who had attempt-
ed to kill herself. She passed a Penknife behind the
Trachea directly into the Oesophagus & when she
attempted to swallow, the food & water passed out of
the wound, & the Blood vessels were uninjured -
Vide. Med. Museum. Vol. 4th

Lecture Seventh.

On Punctured Wounds.

By these, we mean a wound penetrating any particular cavity of the Body: as the Thorax & Abdomen. Wounds of the Thorax. When a wound has been made, which penetrates into one of the cavities of the Thorax, Air passes into that cavity, & the Lungs collapse. In this way respiration is rendered difficult. If the Lungs be wounded, Hemorrhage takes place, in proportion to the size of the Artery or Vein wounded. The Blood flowing into the cavity of the Thorax. When one of the Intercostal arteries is wounded it is recommended to pass a Ligature around the rib, and in this way to confine a bit of lint on the divided vessel. Incised Vein. Punctured wounds of the Thorax if properly managed, will sometimes heal by the first intention. But if the wound has been made by a Bullet or Shot suppuration must take place, in order that the deadened parts may slough off. All Wounds communicating with this cavity, which cannot be united by the first intention, are attended with great pain, for Inflammation has to take place in order that the deadened parts may separate, & this is apt to run high; taking place frequently in these cases over the whole external surface of the cavity. Here the Antiphlogistic treatment should be rigidly attended to. To illustrate the plan of

treatment; I will relate a case. Sometime ago, a young man, in pushing his Boat off into the River Schuylkill happened to hold his gun in such a manner that it went off, the whole load of Shot, with the wad, passed into the Thorax, between the Seventh & Eighth ribs, about four inches from the Sternum, & passed out on the left side, between the corresponding ribs, about three inches from the Sternum. I bled, purged, & gave him Sudorifics & Anodynes; and applied a Dress & with poultice to the wound, taking care to confine the Poultice in a gauze Bag to prevent any from getting into the cavity of the Thorax. On the third day he complained of great pain in the right side. To relieve this I bled him. He complained of no cough from the beginning: on the fourth day there was great discharge of serum from the wound, which was secreted from the vessels of the Parts after the inflammation had abated, You know that this is one of the ways that Inflammation terminates in Resolution; and this would have produced Hydrothorax, if the matter could not have escaped. The symptoms in this case were so violent, that I took 180 ℥ of Blood from the Patient in 12 days. In 30 days the wound was completely healed & the patient well. Sudorifics & Anodynes, were given in this case to relieve pain. All Surgeons who have written on wounds of the Thorax, recommended that the Air should be drawn out; this precaution was founded upon a false theory, they supposed Air

to be of an irritable nature; and thought that, if left in the
Thorax, it would excite inflammation of the Pleura and on the
surface of the Lungs. By an experiment (this is proved not to
be the case) which I made on a kitten formerly mentioned.
Two Officers at play, wrangled over their cards, one of them
stared the other with a Disk. The wound communicated
with the cavity of the Thorax, when I was called in I found
his respiration difficult, his extremities cold, & his pulse
frequent & small. I bled him once to prevent inflammation,
& gave him a Ludovici Snoddyne, and afterward purged
him, & applied Ad. Plaster, so as to bring the sides of the
wound in contact & retained them so. In the course
of a short time he recovered & not a single symptom
of Inflammation occurred. Altho' there was no pains taken
to remove the Air from the cavity of the Thorax, upon closing
of the wound. In this case the air was removed by the
Absorbents. To conclude this subject, it may be laid down as
a general rule that wounds communicating with the cavity
of the Thorax, are attended with such high inflammatory
symptoms that frequent & copious Bloodletting is always
necessary. Wounds of the Abdomen. I will first
remark that air, when admitted into the cavity of the
Abdomen is, as noxious as in the Thorax: which
has been proved by an experiment made upon a dog.
When wounds of the Abdomen do not penetrate its Cavity
they require no particular treatment: But if they
do, the sides of the wound are to be kept together,

by the interrupted suture: - in order that the edges of the Peritoneum may unite, the Ligature should have a needle on each end. The Stitches are to be made about half an inch apart, the needles are to be passed from within, out, about $3\frac{1}{4}$ of an inch from the edge of the wound, through the Peritoneal Muscles & integuments. The ligatures should all be passed before any of them are tied, so as to bring the knots on one side of the wound, otherwise pressing it on the wound would produce ulceration. The Patient is to be kept in a recumbent posture on an Abstemious Diet. If symptoms of inflammation run high, Bleeding, Purgings &c. are to be resorted to. After an adhesion of the sides of the wound, have taken place, the sutures are to be removed & adhesive plaster applied. A wound communicating with the cavity of the Abdomen, is dangerous in proportion to the injury done the contents. If any of the contents are injured, they are to be examined, before the external wound is closed in order that they may receive the necessary treatment. If the stomach or bowels are wounded, there is danger of their contents passing into the cavity of the Abdomen; & thereby produce Peritoneal inflammation. A Case came under my care of a Man who had received a wound in the Stomach; He had been drinking Porter just before he received the wound, when I was called I found he had vomited Blood & had a weak pulse. I bled him, & applied a Plaster to his Belly, on the 2nd day I found him with a weak pulse, his Extremities cold & a Hiccough. He Died on the third day. I opened the Peritoneum and

Found it very much inflamed; in consequence of the parts being extravasated. If the Stomach is wounded blood is generally vomited. Wounds of the Small Intestines. The food last taken is generally discharged through the wound, into the cavity of the Abdomen: And in wounds in any part of the intestinal canal, blood is generally discharged *per anum*. Wounds of the Stomach or Intestines are to be closed with the interrupted suture. If the Intestine is entirely divided, four stitches are sufficient to unite the divided ends. The Ligatures are to be cut off close to the wounded part (whether Stomach or Intestine) is to be replaced in the Abdomen, and the external wound treated as heretofore described. Some Authors recommend, that the Ligature be brought out at the external wound, but this is unnecessary; because the Ligatures if cut short, when they separate, pass out, *per anum*. The Patient is to be kept upon low Diet (*Regimen Miumens*) & Opium is to be given to allay pain, & diminish the Peristaltic motion of the Intestines. Longitudinal wounds of the Intestines are more difficult to treat than Transverse, because in such it is more difficult to apply the Sutures, and when applied, the diameter of the Intestine, at that part is diminished, hence in short longitudinal wounds, I don't know but the Practice would be a good one to remove that part of the Intestine which is wounded, & unite the ends by four stitches: That is, to make a transverse wound

of it. When the external wound is large & the Stomach
& Intestines wounded, the danger of the contents,
passing into the cavity of the Peritoneum is lessened;
for in such cases their contents may pass safely out.
Dr. Archer of Maryland, communicated a case
to me, in which the external wound was so large,
that Bread & Cheese, which the Patient had just
taken, fell from the Stomach, through the Wound
upon the floor. Some Cabbage passed from
the Stomach, through the cavity of the Peritoneum,
down into the Pelvic region, & there excited
inflammation, & Suppuration. The Abscess pointed
externally, it was opened, and the Cabbage
was distinguished with the Pus. Yet the Patient
recovered. When the Omentum is wounded,
and the blood vessels have to be taken up to stop
the Hemorrhage, that part of the wound to
which the Ligature is attached, is to be brought
as near the external wound as possible, & the
Ligature brought out externally, in order that
as little of it as possible (the Ligature) may be within
the cavity, & when it separates it is to be removed.
In most cases of wounds communicating with
the cavity of the Abdomen, some portion of the
Omentum or Intestine protrudes through
the wound; so, that if any of the contents are
wounded it can be scarcely seen. On the symptoms
as great debility, cold sweats, nausea, or discharge
of Blood by Vomiting, or per Annum, evince

17. But this is not always the case, and the question has been
proposed whether (when the external wound is so small
that we cannot examine the contents of the cavity to see
whether they are wounded) whether we should dilate
the external wound? In such cases my Practice would
be to dilate the wound a little, for, by a little dilat-
ation the Intestine will protrude; and perhaps the
very part that is wounded. I would not dilate the
external wound much; because wounds of the
Intestines will frequently heal, without any thing
being done to them: as the following case will
prove. Sometime ago a couple of white men
seized a negro man in Market Street & for
a runaway. The negro resisted: at which, one of
the white men, was so enraged that he shot him
with a Pistol. In this case the Intestines were
wounded, which was proved by the discharge of
Blood, with his faeces. Yet he recovered although
nothing was done, but to close the external wound
and the usual treatment as bleeding, purging, low
diet, Fomentations, Blisters, &c. A Child came
under my care, sometime ago, who was shot by an
angry father, intending to shoot his wife instead
of the child, soon after the accident the Child
died, upon examining the Bowels after death I
found several shot holes through the Intestines;
and through these holes worms of the Lumbriciform
kind had passed their heads; - causing great irritation
& completely preventing the healing of the wound.

Otherwise it is highly probable, the Child might have recovered. In all such cases, as the above, when wounds of the Intestines are left to nature, or indeed when the intestines are wounded at all, a very low diet is to be enjoined. Bleeding is to be used, but not Purgings. Much attention to the Pulse, which is generally very small and weak. The external wound, if small is to be treated with Ad. Plaster: But, if large, with Sutures, Blisters and Fomentations to the Abdomen are to be applied: and lastly Opium, is to be given, to lessen as much as possible the Peristaltic motion of the Intestines, in order that the wound may have time to heal. It may be known by the Symptoms, or from that part of the Abdomen upon which the wound is inflicted, what part of the Contents are wounded. Thus if a wound be received in the right side, in the right Hypochondria, the Liver most frequently is wounded. If the right Lobe is wounded, there will be pain in the right shoulder, and if the left lobe is injured, the pain will be in the left shoulder. If the wound in the liver be small, it will heal very easily. But if large, from the great vascularity of the liver, the Hemorrhage generally proves fatal. The Peritoneal inflammation, will most probably come on in consequence of Blood in the Cavity, which will prove fatal. Treatments. The Patient is to be kept at rest. Bleeding & very low diet, Blisters to the part, Fomentations are proper. Wounds of the Gall Bladder, are

generally fatal, from the Gall producing Peritoneal inflammation. In wounds of the Kidneys, there is generally bloody urine discharged, which proves to us the injury done to the Kidney. When the kidney is wounded on its anterior side, such wounds are not necessarily fatal; as the urine does not go into the Cavity of the Peritoneum. But if the Kidney is wounded on its posterior part, so that urine may escape into the Cavity of the Peritoneum, the wound will generally prove fatal; from the Urine exciting Peritoneal inflammation. Wound of the Bladder. The same observations are applicable that are to the kidney; if the parts lying without the peritoneum, only are injured, the wound will not necessarily prove fatal. But if the Fundus of the Bladder be wounded, urine will be extravasated into the cavity of the Peritoneum and thereby produce inflammation & finally Death. Wounds of the Pancreatic Duct. These from the escape of the Pancreatic juice are mostly fatal.

Lecture 8th

Wounds of the Cavities of the Joints.

In incised wounds of the large joints, the great object should be, to produce an union of the sides of the wound, as soon as possible; for this purpose: The limb is to be placed in the most favorable situation, for the approximation of the sides of the wound, and is to be bent on the Pelvis, and a splint applied on the back part to reach from the Tuberasties of the Ilium, to the Ankle. Adhesive Plaster is to be used to keep the sides of the wound in contact. Mr. May prefers the interrupted suture for this purpose but adhesive plaster will answer every purpose. But if you should prefer sutures, you should take care not to pass them, within the cavity of the Capsular Ligament. Wounds of the joints, treated in this way will generally unite kindly & are followed by no bad symptoms: Whereas, if treated in the old way, are very dangerous. I will give you an example of this. Sometime ago a Soldier by accident struck a Chisel in his knee, on the inside, the wound penetrated into the cavity of the joint. I extended the leg and kept it so by a splint, applied to the back part of the limb, and dressed it with Ad. Plaster. In a few weeks, the wound was perfectly well, whereas in a similar wound (that I saw in 1798) dress'd from the bottom. The Patient was near losing his life. The wound was nearly 4 months healing, & when healed the joint was stiff, & the Patient never recovered the use of it. This shows the great advan-

stage which the plan of extension & use of Ad. Plaster has
over that of dressing the wound from the bottom (as it is
called) by cramming it full of Lint &c. In wounds of the
Capsular Ligaments of the Joints - for in wounds of the
Joints where permanent extension is not kept up, the
first motion in the morning breaks the Adhesion,
that may have formed, during the previous night. The
irritation caused by the back motion of the part, tends
very much to increase the Inflammation of the part.
Lacerated & Contused wounds of the Capsular
Ligaments of Joints: When these occur, we cannot
from the nature of them expect a speedy cure. The
best plan of treatment is, to place the limb in such
a position, as shall bring the sides of the wound as
near each other as possible, a Bread & Milk poultice
is then to be applied to the part. If inflammation
runs high, blood is to be taken from the part by Leech-
es, Bleeding from the arm, Purges, Plasters to the
part, with the Antiphlogistic regimen. If Purges
are inconvenient as respects the Limb, they are to
be omitted, when the deadened parts slough off, &
granulations appear, the sides of the wound are to
be brought in contact; and to be kept so, with the
Ad. Plaster. I will just remark, that the joints
do not run into inflammation as soon as other parts.
Compound Fracture. When the articulating ends
of bones are much injured; together with great laceration
& contusion of the soft parts; it is a question of
much moment, whether amputation is immediately
to be resorted to or not. To illustrate this, by the symptoms

of such a case, with the method of treatment, I shall
state a case. In the year 1796, while I was in London,
a man was brought into St. George's Hospital, with a
lacerated wound of the Elbow joint. The ends of the
Bones being very much injured, Amputation was im-
mediately proposed by the Surgeon; But, the Patient
objected, & a Poultice of Bread & Milk was
applied to the part, with the use of the Antiphlogis-
tic regimen. For the first 3, or 4 days, he complained
of great pain of the part, sickness of the Stomach,
& vomiting came on: He could get no sleep although
Opium was given him. On the 3rd day, together with
the vomiting, Purging came on with delirium, & the
wound looked very bad. On the 6th or 7th day the
delirium became worse. The parts were black, and
nothing like suppuration had taken place from
the beginning, on the 8th day he died. Now if
amputation had been performed, there is little doubt
but that the Patient would have recovered. In such
cases, if the Patient escapes mortification, Anchylosis
or Bony union takes place, which will destroy
the use of the joint, Tetanus, or Neptic Fever may
come on, in consequence of the great irritation.
When I am called in such a case, it is my practice
to state to the Patient, or his friends, the danger he is
or would be in, without amputation, the danger
of attempting to save the limb, *Ceteris Paribus*, is
greater in Summer than in Winter, in old People
& those of a bad constitution, also persons who are
great drinkers of ardent spirits. In injuries done
to large joints, where we attempt to save the limb,

in what manner is the injury repaired? When the articulating ends of the bones are injured, Anchylosis must take place: and in order to do this, the Cartilages must be removed; for we know that cartilage will not inflame. Granulations exfoliate; I will relate a case. A young man received a laceration of the Ankle joint. I attempted to save the limb but Pectic Fever took place, and Amputation was resorted to, at the end of the month. After the limb was removed, on examination, I found that the Cartilage from one part of the articulating surface of the Astragalus & Tibia had been removed by the absorbents, & granulations had formed on the Bone. In this case, if the system could have borne it long enough, the Cartilage would have been entirely removed, & a complete Anchylosis would have been formed. In order to favor Anchylosis or Bony union, The joint is to be kept perfectly still, some authors, as Mr. Coock & the late Dr. Parker of Liverpool recommend the extremities of Bones in wounds of the joints, when the articulating surfaces of the bones are lacerated, to be sawed off. The reason of which is, that the cartilage may be sooner removed, But as this is generally a very difficult, and always a very dangerous operation; and as the removal of Cartilage is all the advantage gained by it, I would prefer cutting, or scraping off the Cartilage from the ends of the bones with a knife. After this is done, the wound is reduced, in every respect to the state of a compound fracture, except the Capsular ligament, surrounding the Bones, which may be removed if necessary; & is to be treated as such. Plasters are to be used to keep the parts perfectly still.

Lecture 9th

Of Wounds of Nerves and Tendons. When Fever, Tumefaction of the parts, pain, delirium, Rascals &c. follow the laceration, it is supposed a Nerve, or tendon is wounded. But we shall explain these symptoms in a different manner. Sometimes dreadful symptoms may follow the puncture of the Tendonous expansion, which passes down, from the Tendon of the Piceps muscle, for we know from strokes on the outside of the Thigh, or from a puncture of the *Fascia lata* of the thigh, distressing symptoms arise from the formation of Pus underneath it, which is not able to make its escape. In such cases a Plaster should be applied to the part, and if this does not remove the symptoms an incision is to be made in the *Fascia*, in order that the Pus may escape. But when these symptoms follow venerection, they are rarely, if ever produced in this way. When a Tendon has been cut through, the limb is to be placed in such a situation, as not to keep the ends of the divided parts together. For instance; if the Tendo Achillis be divided the Foot is to be extended & kept so by a splint or something else, in this way the ends of the divided Tendon is brought in contact. Doctor Bysie recommended an apparatus for wounds of the Tendo Achillis, of his own construction. It not only prevents extension but also all rotatory motion. Care is to be taken that the edges of the skin do not fold in, between the ends of the ends of the divided tendon. In order to prevent this I generally make a superficial stitch through the skin, so as to keep the edges together, and apply Ad. Plaster over

the whole. In such cases the Patient should not use his foot for six, or eight weeks, for if he does, the union, between the divided Tendon, will be so slight, that the Muscles of the calf of his leg will be drawn up too high, in consequence of the elongation of the Tendon. When a Nerve is punctured or divided in Phlebotomy we can always know it, from the Patient's feeling a sharp pain at the time, and from a numbness of the parts below. Following it another strong argument, against the opinion, that the dreadful symptoms, that sometimes follow venesection, are produced by a puncture or division of a nerve, is, that in Surgical Operations, we know many large nerves are divided; yet none of those dreadful symptoms occur. The partial division of a Nerve, tho' they may produce bad consequences, & from what has been said above, we can always tell, when that is the cause of the distressing symptoms. When it is the Nerve should be divided. Wounds of Veins. Generally they are of little consequence. But, sometimes, sides of veins do not unite by the first intention. The inflammation on the internal surface of the vein, and with it, a train of dreadful symptoms, suppuration sometimes takes place, in such cases the Pus passes into the general circulation. Dr. John Hunter, says, in suppuration of any part, where there are large veins, this often takes place. He also says, that inflammation, pain &c. which sometimes follow irrhesection, is not owing to the puncture of the Nerve, or Tendon; but it is in consequence of the wound ^{not} uniting, by the first intention; its inflaming, and the inflammation

being continued into the cavity of the vein or internal surface: The coats of a vein under different circumstances takes on all the different stages of inflammation, viz, Adhesive, Pustular, and Ulcerative. In such cases the Pus is not collected, but washed away by the Circulating system. But Mr Hunter has seen many cases, in which the sides of the wound have united in different places, by the Adhesive Inflammation; and as Abscesses have been formed in a vein; which was thereby, rendered impervious. He says that Inflammation often takes place in the veins of Horses, from Bleeding; I have seen it extended along the whole of the jugular vein in Horses even into the Chest, when inflammation of the veins runs high. He says the Symptoms are similar to other inflammations, only the danger of the Patient may be increased, by the passage of Pus, into the Circulation. Sometimes, when the sides of the vein adhere in different places, Pus is confined in the intermediate space, & ulceration of the sides of the vein, will take place. Adhesive inflammation will come on, in the cellular membrane around, & a sack will be formed, which will confine the Pus in this way, a large abscess will be formed sometimes in the course of the vein. Mr Hunter says, he has seen bad effects follow the use of Adhesive Plaister, more frequently than the compress after Venesection; The reason is, when a compress is used, Blood coagulates under it, directly over the Orifice, & this is the most natural bond of union. The Inflammation in being generally travels from the orifice in the vein toward the Heart: also sometimes from the Heart. Of the above observations of Mr Hunter be just, the Operation for cutting down to the Vein as recommended by Benjamin Bell, will be always improper. In order to prevent such inflammation, the

orifice after Bleeding, should be wiped clean, the sides of the wound completely closed & a compress of Linnen applied over the Part or orifice. But when such inflammation of vein occur in my practice, I apply a small bit of Adhesive Plaster over the orifice, and then a large blister to the part. Immediate pressure may be used in the first instance, In a case of great tumefaction, Pain, Spasm and inability to bend the arm, which followed bleeding, in a Girl, in the Penina Hospital, I completely removed the symptoms by the application of a Plaster to the tumefied part. And I generally & earnestly recommend the practice; as I was the first who used it, Mr. Wignall a player in this city, died of an inflammation which succeeded bleeding.

Lecture 10th

On Gun Shot Wounds.

When Fire arms first came into use, the wounds produced by them were supposed to be poisoned or burnt. This was not surprising, the slowness with which such inflammation, the lividness around the wound. The horrid discharge, and the mortification or sloughing off the parts were enough to induce them to believe, that those kind of wounds were different from all others. These appearances give rise to an enquiry respecting the remedies, united to the poisonous nature of the wound. Their applications were

all of an acrid kind, which only retarded the cure,
by increasing the Gangrene. But I hope to prove to
you, that they are similar to contused wounds, and
that they partake, in every instance of Lacerated
& contused wounds, being neither poisoned nor burnt:
But made by the projection of an obtuse hard
body, with considerable velocity. When the velocity
of the Ball has been very great, the parts around
the wound are completely kill'd, & slough off, in ten
or twelve days. If the wound is in the neighbour-
hood of a Blood vessel, where the sides are killed,
when the slough separates. Hemorrhagy takes
place / sometimes, to a great degree / if not guarded
against. When the velocity of the Ball, however,
has not been very great, the parts are only lacerated
and the wound may unite by the first intention.
To prove this, the part where Ball comes out always
heals sooner, than where it entered. It has been the
practice, with the older Surgeons to dilate
all Gun shot wounds, but this is an incorrect
practice. They are to be dilated only under certain
Circumstances. 1st Where the Scalp is wounded,
2nd Where there is great Hemorrhage, in cons-
equance of a wound in a large Blood vessel;
& this vessel cannot be come at without dilatation,
3rd When the Ball is lodged near a cavity, & there
is danger of its getting into that cavity; as for
instance, near the Trachea, so as to impede respi-
ration, some Surgeons say, that when the Ball
has come in contact with the Cranium, that por-
tion of the cranium should be immediately removed,
with a Trephine, But I would advise Bleeding,
& other Antiphlogistic remedies to be used, first

to prevent inflammation of the Dura Mater, or Brain, until it was discovered whether that part of the Cranium was killed or not, if it was Trepaning should be resorted to, some Surgeons recommend bleeding, in every case, where injuries are done to the head; but these remedies should not be used unless Fever & other symptoms of inflammation authorise the Practice. If the Ball, or extraneous matter can be taken out, with a little dilatation of the wound it certainly should be done to ease the patient's mind; and this is the more necessary where any portion of the Clothes have been taken in with the Ball. But in other cases & where the Ball is deep seated, the extraction of it should not be attempted, as we know from experience, that Balls &c. may remain in the Body for years, without any inconvenience. Ad. Inflammation is excited & a Cist is formed, which serves as a Case for a Ball. Where the extraction of a Ball, or other extraneous matter is attempted, the Finger is always to be used in preference to a probe, or Forceps, where it will answer; for by these instrument the laceration of the wound is greatly increased, as an Argument against the universal extraction of Balls. They are frequently found in a very difficult part of the Body, from that in which they entered. As this is frequently the case, we should not be able to find them, if we dilate them. Balls have frequently been known to pass completely round the Chest, without puncturing its cavity. There is a case, related by a Surgeon in which the Ball about the ankle and appeared in the thigh. In cases of Gun Shot wounds the best topical application, is a warm Bread & Milk poultice. Stimulating applications

are to be used, when a sufficient degree of inflammation, is not produced spontaneously. These poultices are to be used, until the deadened parts slough off. The wound is then to be treated with simple Cerate &c. The general treatment is to be regulated by the state of the System: when you are first called upon, you are to give the Patient a sudorific Anodyne, to remove the languor & depression of mind, which generally follow Gun Shot wounds. Afterwards, if the necessary degree of inflammation does not come on, & there is great languor, Cold extremities &c. Opium, Sudorific Anodynes, and a Cordial Diet are to be preferred. But if the Fever run high, Bleeding & other Antiphlogistic remedies are to be used, these are only to be used in cases of Great Inflammation, for moderate Inflammation is salutary & necessary. I knew a case, where Tetanus was induced, by reason of excessive bleeding and other antiphlogistic remedies. When Suppuration is established, Bark &c. is to be used. If a Bone is injured so as to produce a compound fracture, the splints of Bone are to be removed, and the wound treated as a compound fracture. Of Gun Shot wounds of Particular parts. First of the Head, These require no particular treatment, more than may be known, from what has been said already. Gun Shot wounds of the Thorax. These in general require profuse bleeding, Low Diet, Plasters on the outside of the Chest, together with a Soft Bread & Milk poultice, applied in a yarn Bag, to the external wound. Dr. Rush drew 120 oz of Blood from a Sea Captain (who received

a wound in his Thorax and thereby saved him. Myself drew 120 OZ of Blood in fourteen days, in a case which came under my care, & thereby saved the patient. The treatment in such cases, should be the same, as in a violent case of Pneumonia. Of Wounds of the Spine. If the wound happens in the Neck above where the Phrenic Nerve goes off, Death is the immediate consequence; as the Diaphragm is soon Paralyzed. Where the wound is lower down paralysis of the parts below it takes place; & Death follows in a few days. Lord Camelford, died of a wound of this kind received in a Duel, He lived only five days after receiving the wound. Gun Shot Wounds of the Abdomen. They are dangerous, according to the parts or contents injured. Wounds of the Liver owing to the size & vascularity of this viscus. The Hemorrhage is generally great, attended with much depression, Languor of Circulation, Hiccough &c. Gun Shot Wounds of the Gall Bladder. They are fatal from the extravasation of Bile, producing Peritoneal inflammation. If the Intestines are wounded, the Faces are generally tinged with Blood and if any of them are extravasated into the cavity of the Abdomen, they produce peritoneal inflammation & Death. If the Bladder is wounded, so that urine may escape into the cavity of the Peritoneum, Death is inevitably the consequence. But the Bladder may be wounded in such a way, that this may not take place; and we hear of Balls forming the Nucleus for calculi; such wounds are not necessarily fatal. Gun shot Wounds of the Kidneys.

In wounds of these / as well as of the Bladder / the urine
is tinged with Blood, and if they are wounded on
their Posterior part, they are not necessarily fatal, for
urine in such cases cannot get into the cavity of the
Peritoneum. In all these cases little can be done, the
patient is to be kept quiet, The Food to be small in
quantity & of a mild nature. Blisters, Fomentations,
Bleeding &c are to be used according to the nature
of the Case. When the Stomach or Bowels are wounded
their contents, sometimes, escape into the cavity of the
Peritoneum & produce Death. In Wounds of the Abdo-
men, if any part of the Intestines protrudes & is un-
injured, it may be returned, but if injured, it is to be
removed, & the ends brought together & retained
so by the interrupted suture. Sometimes Bullets
are lodged in the large joints. In such cases the
danger is very great, either of losing the limb or
the life of the Patient. If the velocity of the Ball
is not great, & the contusion not violent, the parts
may unite by the first intention. For Bullets have
passed under the Patella, without destroying the
joint &c. A Surgeon relates a case, where the Bul-
let passed through the Ankle, without displacing
any of the bones, & in fact with so little injury that
the parts united by the first intention. But such cases
seldom occur, the parts, generally, are very much
contused. Hectic Fever & Death are the consequence,
If the injured joint be not removed by amputation.
And in cases, where amputation is necessary it
should be performed immediately; First because
the System has not suffered, & Secondly, because
the Patient will always submit to the operation with
more Fortitude than at a late period. — — —

Lecture 11th On Ulcers.

Having treated of Inflammation & Wounds, we come next to ulcers, as a consequence of them. We shall first treat of them, as occurring in a healthy state of the constitution, & the manner of treating them. In consequence of wounds on the removal of the Soft parts, the sore first begins with a red appearance; & from its surface small red points sprout out, which from their resemblance to Grains have been called granulations. Before this takes place, however there is a secretion and effusion of Coagulating Lymph; which is converted into vessels & constitutes their Granulations.

There is also, thrown out from the surface of the Sore, Pus, which adheres lightly to its Surface: the inflammation around ceases, and the parts being brought together, a Cicatrix forms, & the whole is perfected, the Granulations possess two properties. First of contracting the sore; as may be seen by the puckering of the skin around. 2^d By uniting together, when brought into contact. The advantages of the Granulations, are many; partly the power of contraction, they lessen the surface to be covered by the Cicatrix, & hence lessen the extent of a very sensible surface; for a Cicatrix always remains more sensible & tender than originally formed skin, thus, cold has been known to produce sloughing from a Cicatrix; when no other part has been affected. Granulations are also the source of the new skin, formed, they adhere to the edges of the old skin, & when they raise up, so as to be upon a level with the old skin. Then the progress of cicatrization begins; most generally at the circumference of the sore & advances to the centre. But sometimes, this process

begins at two or three different points in the surface; & in such cases, the process is soonest completed. The Cicatrix, when first formed is of a Blue colour. The Treatment of simple Ulcers, is, merely to apply dried lint, over its surface, to absorb the Pus; & over this a plaister of simple cerate; the whole to be secured by means of a common roller, this treatment, is to be continued until cicatrization is completed. Mr. Daynton, has advised the approximation of the sides of the ulcer (we are now supposing it to be on the Leg) by adhesive plaister; taking care to shave off the hair, from the part: over this, to apply a common plaister of the simple cerate; & over the whole a common roller. Care is to be taken, in applying the adhesive plaster to leave spaces, between the slips of plaster, in order that the Pus may escape; otherwise an abscess would be formed, the Cotton roller should be applied from the foot to the knee. He has also advised wetting the parts with cold spring water every time before the removal of the dressing: it abates the heat and inflammation of the part. By this treatment, the Granulations are brought together, and the whole size of the sore is diminished. Some ulcers, when treated in this way, after granulations have risen to a level with the parts surrounding, they are backward, in skinning over. In such cases they should be highly stimulated, by the application of Spirits, or a very weak solution of Lunar Caustic. If on the contrary the granulations run above the surface, of the wound the Lunar Caustic, is to be used to cut them down. Burnt Alum & a variety of other caustics are used in such cases. There are many impediments to the healing of an ulcer. 1st In cases, where ulcers are seated on the Leg; owing to the Languid circula-

tion of the Blood in the veins. By walking about, the Blood vessels of the tender & newly formed granulations are burst. Sometimes, the granulations put on a dark colour, from the stagnation of the blood in them, when the patient is walking, or standing erect. An Ulcer that irritates, discharges a Bloody Serum, the granulations are discoloured & ulceration takes place, enlarging the Ulcer. The remedies for this state of the ulcer are 1st Rest, in a horizontal posture in the bed, or with the Leg resting on a chair, and in order to give tone to the Blood vessels, of the Leg. 2nd Bandages are to be used: These are of three kinds 1st The common cotton roller, 2nd Laced Stocking, and 3rd Ad. Plaster, I generally use the common roller; and when the roller is properly applied, it answers every purpose. Some have recommended exercise, to give tone to the vessels of an Ulcer. But this is always improper, because it frequently causes sloughing of the part, & because the tone can better be given by the application of Spirits &c. 2nd Impediments to the healing of an Ulcer, is a Oedematous state of the parts. Here the tela cellulosa, being distended, with water, the edges of the sore are put upon the stretch & granulations cannot form. The Oedema being less at night, strongly indicates the advantage of rest, in this state of the Ulcer, the Roller should be applied, & the morning should be chosen for the application of the parts are less distended at that time. Thirdly, the third impediment to the healing of an ulcer is the studding in lint &c. for these act as extraneous bodies, keeping up constant irritation. In fine it acts as a Pea, in an Issue. Irritating Salves &c. produce the same baneful effects. In many

the removing of the dressing &c. alone has cured the sore. I heard of a case, of Fistula in Anna, that was cured by the Patient's setting in a cold spring, & in the Mud. Now the cure, was probably effected here, by the old dressing being removed. But the healing of an ulcer is impeded by whatever impairs the Patient's constitution. As frequent Intoxication; for so often as the Patient gets intoxicated, so often does he neglect his leg, & is liable to get it injured. That ulcers are influenced by the general state of the System, is proved as follows: I have known two large ulcers on the Leg, completely cured by a severe attack of the Pleurisy. Sometimes, however, ulcers heal under very opposite states of the System. The above method of treatment is the most proper one for recent, healthy ulcers: But where they are of long standing, they are in their appearance from that we have described. We shall now speak of the treatment of Different kinds of Ulcers, & first of the Inflammatory ulcer. This is in its appearance burnt. It is not painful and discharges matter, between the consistence of Pus & a watery fluid. Coagulating Lymph sometimes adheres to the Granulations. The indication of Cure here is first to reduce inflammation; which is done by Bleeding from the Arm, Purges, Low Diet & the application of a Bread & Milk poultice: together with rest, particularly in Bed; & more effectually to favour the circulation of Blood in the vein, & to retard it in the Arteries. The foot of the Bed should be a little elevated: this attracts Blood from the part, without taking it from the constitution. The inflammation being reduced, the sore is to be treated as a simple ulcer. 2nd Of Fungous Ulcers: Here the Granulations are large & rounded on the Top, rising above the surrounding skin, & having no disposition to form a Cicatrix. They are sometimes attended with pain, and bleed

on the slightest touch: at other times, they are attended with little sensibility. Treatment. Prepare made by dry lint at first & afterwards Ad. Plaster is proper; and if the superabundant granulations, are not removed, Lunar Caustic is to be applied. If the Pore is large, first apply the Caustic to a part & afterwards to the whole. But if the ulcer is small, it may be applied to the whole of its surface; then it is to be treated as a common ulcer; that is, after the superabundant granulations are removed, an infusion of Oak Gall, is a good wash, where the ulcers are backward in healing. Mr. Bell recommends a weak solution of Verdigrise, Sal. Ammon. Calcin'd Alum, and red Precipitate. Edematous Ulcers, when on the legs they are generally inflamed & the granulations of a dark purple colour. This inflammation is to be reduced by the Anti-phlogistic remedies, unless contra indicated; in those cases the legs should be raised above the body; when the ulcer has been brought to a healthy state, Ad. Plaster may be used: also Bandages from the Toes to the knee. In such cases I also take up the Vena Saphena at the knee, which acts as a support to the column of Blood above; and thereby prevents pressure from that source, & the
of the Sloughing Ulcer: This occurs from the weakness of the granulations. Often when the cure appears to be going on well, the granulations of the part become purple & slough off. In some cases it is curious to observe the Sloughing process going on in one part & cicatrization in another. The Sloughing is not always confined to the Ulcer but is sometimes extended to the old skin, and parts surrounding the ulcer. These Ulcers depend upon a partial weakness; for in some cases sloughing

will be going on in the ulcer one leg, while an ulcer in the other shall heal up very well in the same patient. Here the constitution has little influence on the Ulcer. The Remedies here should be the same, as formerly advised for mortification from too weak action.

Bark & Opium to relieve pain. Poultices with Laudanum, also, the Charcoal poultice is to be used, as also, a Barrot poultice, together with a cordial Diet. In warm weather the Feton is apt to be disagreeable & Maggots are sometime formed. The best remedy for them is, washing the part with diluted Nitric Acid. After the slough has separated, the ulcer will readily heal. In some cases, when the constitution is weak, the granulations, after rising to the surrounding surface, are destroyed by ulceration. Here Bark, Roarishing Diet, Rhy? Nitric Acid, are to be used, Cold water to the part, for ten, or fifteen minutes, three or four times a day. Linth, method with a weak solution of Lunar Caustic, is also a good application: Ung. Citrin, also, when this fails an infusion of Oak Gall, & Laud, or Linth may be tried: These applications do good, by strengthening the Granulating surface. 5th Indolent Ulcers.

From many circumstances in the case of ulcers, they put on this form. The surface will not contract & no cicatrization goes on, the edges are callous & Tumefied. This last is owing to the effusion of coagulating Lymph, by repeated inflammation, & the Absorbents being unable to remove it.

The first thing to be done is to remove the callous edges, & over the whole surface of the sore. By this treatment the ulcer will be reduced, to the state of a simple ulcer & the sides then heal readily. The callous edges may be removed by the knife, or, if the Patient prefers it, by Caustic. The Granulations may also be removed by the Caustic. Firm compression, but Banda ges has sometimes answered the purpose. Mr. Baileton asserts that Ad. Raster with

will answer every purpose; & the Granulation, in such cases, are removed by absorption. Sometimes unhealthy Granulations, will rise in the middle: then the Caustic should be applied; taking care to avoid the edges. Mercury given so as slightly to affect the mouth, has sometimes been attended with the happiest effects. Other applications have been used in indolent ulcers, such as the Gastric juice, a weak solution of Lunar Caustic & Red precipitate. 6th Carious Ulcers. Bell says, every sore, seated or communicating with a Carious bone, may be called a carious ulcer. The sore is caused by the Stimulus of the dead parts or Matter. As soon as the bone is found to be loose, it should be extricated. In such cases, you cannot ascertain whether it is bone or not, from its being deep seated, & having but a small external communication. In such cases, I think the best plan to ascertain whether the bone is loose or not, is to introduce a Probe & make pressure on the bone, if it is loose the pressure will cause pain, & sometimes a discharge of Blood, from the separated bones pressing on & wounding the newly formed granulations, on the surface of the bone, underneath it. But if the bone is not yet separated no pain will be felt. It has been the practice to depend upon the motion of the bone as a test of its being loose. But when it is much covered with soft parts the motion must be obscure, even if it is loose. Having satisfied yourself that the bone has exfoliated, the Scalpel may be used to dilate the Portals, this method there is danger of inflaming the vessels around the part, & as the Sore may be so long as to require an opening to extricate the bone; the best way is to dilate it with a tent, then to introduce a pair of Forceps, break the bone in small pieces,

and then extract it. When the dead bone is once removed, the Ulcer is reduced to a simple state & quickly heals —

4th Varicose Ulcer, is an ulcer depending upon a varicose state of the veins. It resembles the Indolent in its appearance, & the varicose state of the veins prevent the Ulcer from healing, as the veins are dilated beyond their usual size. Methods have been employed to reduce them. These are, pressure by the laced Stocking, Bandages, & the Ad. Plaister. But the objections to these, are, that they must be continued after the ulcer is healed, or it will be apt to return; & 2nd the applications of them is very inconvenient to the Patient, the best method then that remains is the taking up the Vena Saphena. In performing this, some recommend that the Patient be placed in an erect posture, that the veins may be distended. But I prefer the application of the Tourniquet on the limb, so as to compress the veins & leave the Arteries free. The inside of the Leg then being placed opposite the light, a portion of the skin is to be taken between the finger & thumb of the Surgeon (while an assistant transversely across the vein) he is then to divide it longitudinally with the Skin by a Scalpel while the back lies next the vein. The Fascia surrounding the vein should then be carefully dissected away, & the vein secured by a Needle armed with a Ligature. But, before the ligature is tied the Patient is to be put to bed. The incision made by the Scalpel, generally heals about the 4th day. The external wound is to be secured by Ad. Plaister, leaving an interval between the Knives on the passage of the ligature. Sometimes the Vena Saphena is accompanied by a smaller one, which should also be taken up. Very little inflammation attends the operation.

5th of Ulcers depending upon a peculiar disease.

ed action. Under this head I will make two observations. 1st that the diseased action is only local; so that a removal of the parts puts a stop to the disease, & is the case in Cancer & recent Chancre. 2nd if the disease be constitution-
al, remedies must be used accordingly. The Ulcers that attend Duboss destroy the neighbouring parts and enlarge themselves; & sometimes while the healing process is going on in one part, the sore is progressing in another.

Lecture 12th

On Burns

The Morbid effects of violent heat upon the Body are
1st an Inflammation of the Skin & separation of the Cut-
icle, by serum. 2nd Inflammation of the whole skin &
an effusion of much Serum. 3rd Destruction of the
Skin, Adipose membrane, Muscles, the soft
parts & the bone of them. In judging of the consequence
we must consider the extent of the Injury: if but
a small part be affected or its depth not very great,
there is no danger: but if, on the contrary, a large
surface be injured, & at the same time, to a consid-
erable depth, Death is often the consequence. I atten-
ded a man, who was very much injured by the effu-
sion of gunpowder; to whom, I applied a pint of the
Spirits of Turpentine, mixed with Basilicon. It
soon relieved the pain, removed the inflammation, &
restored him to his proper feelings; soon after, he was
tormented with a violent pain in his little finger;
which on examination was found not to have any of the
P^{pts} Terabinth applied to it. It was immediately
applied & the pain removed. I knew a Boy, who
had fallen into a kettle of Boiling water, & was

seal'd up to the waist. The symptoms were drowsiness, rest-
lessness, & when forced to give an answer, would say
"He was in no pain". He died in about 24 hours after
the accident. Burns are more dangerous in young,
& old people than middle aged. Mortification
frequently occurs in old people after Burns.
Burns are more dangerous on the head, owing to
their vicinity to the Brain: & are also very danger-
ous in the joints. The Treatment is either General
or Local; In great weakness, unattended with
excessive excitement, give Wine internally. If the
extremities are cold, apply heat, but on the contrary
if the inflammatory symptoms run high, Bleeding,
Laxatives &c. are to be administered. A great variety
of local remedies have been used, as *Pl. Bini* &c.
this probably may be of service, by evaporation.
I think that the immersion of the part in cold
water, if done immediately after the Burn, would
be of service. Preparations of Lead, Vinegar &
water, scraped Potatoes, equal parts of Linseed
Oil & Lime water, have all been used. But these
only allay the pain, without curing the disease.
Of late, Stimulating remedies have been used, as
Pl. Turp. mixed with *Resilicon*, which I have
generally used with success, & is the best remedy
I am acquainted with. But it should only be
applied to the affected parts, For if applied on any
other inflammation & much distress, would be induced.
Inflammation from Burns have certainly something
peculiar in them. This I infer 1st from the pains being
different, 2nd from the cicatrix of burns being disposed
to contract, & lastly, from stimulating applications
curing them. - when granulations of any inflammation
would be the consequence. W. Kentish, of England,
first used the *Pl. Turp.* & *Resilicon*. He believes

it has a peculiar power of extracting the morbid effects of Fire; and that its action is something similar to the action of Mercury, in the Venereal Disease. Mr. Kentish recommends the burnt parts first to be washed with hot *Spl. Turp.* and *Parilicon*. He took no pains to prevent the ointment coming in contact with the parts, destitute of skin; for he said it would soon abate the pain. I have observed this myself.

Lecture 13th

Of Injuries done to the Head.

Upon the reception of an injury to the external parts of the Head; the soft parts upon which it has been inflicted, become Tumid, Soft & pulpy to the Touch with hard surrounding edges, and to an experienced person, feels exactly as if a portion of the Cranium had been driven in. It has been advised to open the Tumour by incision in all cases; But when we do not expect the Cranium to be injured, it is improper for many reasons, 1st Because such incision give the Patient pain, & 2nd Because suppuration would be the consequence of such treatment. The proper applications are a Bread & Milk poultice, Cold spirits & Vinegar. The integuments of the Head are subject to incised wounds. They require no peculiarity in their treatment. The sides of the wound are to be brought together, & kept so - When Ad. plaister, will answer, it is to be used. But when the wound is large, the interrupted suture is best, taking care not to bring the edges of the wound into complete contact at first; otherwise, when inflammation comes on the parts will be put so much upon the stretch that they may slough after inflammation & suppuration have taken place. The Patches which were before tied with a slip knot, can be drawn

tight, so as to bring the sides of the wound into complete contact. Sometimes the wound is large & a portion of the integuments have slipped up from the Cranium. In such cases it is recommended, by the older Surgeons, to remove that portion of the integuments with a Knife. But this practice is improper, for it leaves the Cranium denuded & the bone would be apt to exfoliate. The proper treatment is to bring the sides of the wound nearly in contact & retain them so by suture; Taking care previous to this, to remove any extraneous matter that might be in the wound, as, Hair, Sand &c. For foreign bodies of any kind being confined, would certainly cause an Abscess. Should Pus be confined under the integuments it should be removed by puncture with a Lancet. The integuments of the cranium are liable to contused wounds, which require no particular mode of treatment. A soft Bread and Milk poultice to the parts, is the best application we have. And if inflammation supervenes. Bleeding, Purgings & the antiphlogistic regimen are to be used. The inflammation attending internal injuries of the head, sometimes runs so high as to cause Delirium: Probably you might be at a loss to know, whether it proceeded from the Brain or its Membranes. But when the external inflation is great, you may rest assured that the Brain or its integuments are not wounded, or in a state of inflammation, for external & internal inflammation of the same parts seldom occurs: to give you an example, when the Villous coats of the Intestines are inflamed the Peritoneum never is, & again we excite Inflammation by Plaster, to cure an inflammation of the Pleura. Sometimes from very slight injuries done the Head, great pain will commence. In some cases, so violent, as to baffle our skill. I have seen several such cases, in which almost every remedy was tried in vain. One or two cases of this kind I cured, by making an incision down to the Bone directly on the pain, after Park, Opium, Bleeding, Blesterning, Spices &c. had all been tried to no

purpose. In another case, where the Crucial incision was attended with no advantage, a cure was effected, by a change of air & climate. The crucial incision & change of air, appear to be of more advantage than any method heretofore tried. I shall now speak of injuries done the Brain & its Membranes. The Brain is liable to compression, inflammation & concussion. Compression of the Brain may be produced by a portion of the Cranium being driven in, by extravasation of Blood, either under the Cranium, or within its Ventricles. The symptoms of a compression are Coma, Pupils, Loss of Sense & its Voluntary Motions, & sometimes nuchea & Vomiting, & some dilatation of the Pupils. This latter is sometimes the case & sometimes not. When the compression proceeds from the bones of the Head, the symptoms are immediate; but when produced by an extravasation &c. it is not the immediate consequence. It has been a question whether the Trephine should be resorted to, or not, in ~~every~~ every case of fractured Cranium; independent of any symptoms of compression. Mr Pott has laid it down as a general rule that it ought. But I think he is incorrect, since I have seen many cases of recovery under such circumstances, as the Cranium, has in some case I have seen been considerably broken in, without producing symptoms of compression. In such cases I thought the Cranium had been broken in, directly over the Longitudinal sinus; for here the Cranium may be depressed without pressing on the Brain. When Inflammation of the Brain or Membranes takes place. Bloodletting should be used. I have bled as often as 4, or 5 times a day; sometimes Ad. Deliquium. In Concussion of the Brain, after trying the Antiphlogistic remedies, Bleeding, Distending to the head & Evacuation should be resorted to. After removing the fracture & elevating the depressed portion, if we completely succeed in removing the symptoms of compressed Brain. The sides of the wound made in getting to the Cranium may be brought together and

kept so by Ad. Paster, union by the first intention
will take place, & the recovery of the Patient expedited.
But in every case, this Practice is not warranted, and
in such cases, a Bread & Milk poultice, of a mod-
erate temperature, is to be applied; & before the sides
of the wound, can with safety, be brought into Contact,
a portion of the Bone must slough away, which will
take place in 6, or 8 weeks. In performing the Oper-
ation, I believe it will always be best & safest not
to saw completely through the bone, but to prep the
piece out with the Elevator, & afterwards to break off
the fragments of the Bone, that may remain, with
the same instrument. In the application of the
Trepphine, care should be taken, never to apply
the pin of the Trepphine to the depressed portion,
but on the soundest part, as near the Fracture
as possible. After a piece of the bone is taken
out, all the depressed portions may be elevated.
Some times, on removing a piece with the Trepphine,
blood which had been confined between the Cran-
ium & Dura Mater (producing the Depression) will
flow out. But, Blood is sometimes extravasated
between the Dura & Pia Mater; In such a case,
it has been recommended to puncture the Dura
Mater with a Lancet, in order to give the extrava-
sated blood an opportunity to escape. This op-
eration has been performed & the Patient recov-
ered: But I never would advise it; Because
1st By persevering in the Antiphlogistic Meas-
ures, the Blood is sometimes absorbed and
2nd Because the Patient rarely recovers of such
an application, altho they may. Such a case is
related by Dr. J. P. Dorsey, in the Medical
Museum, where the Dura Mater was won-
ded and the Patient recovered.

End of Lecture 13th

Lecture 14th

On Diseases of the Eye.

1st of Inflammation, this is of three kinds, 1st where it affects the Eyelids. 2nd when it is seated in the Conjunctiva & Cornea. 3^d when it is seated in the Ball itself. Inflammation of the Eyelid is when all the cellular membrane becomes elevated with a Serous fluid; which swells it so completely as to close the Eye. In such cases, if Fever attended, the Patient is to be bled. In general, the proper treatment is a mercurial Purgé, Low Diet, with the application of a Bag, moistened with Spirits or Camphorated Spts to the Eyes. The Eyelids are also subject to inflammation. In this case, I have supposed that it is an Ulceration of the Roots of the Hairs. Similar to Tinea Capitis. I have used for it Permaceti Oil with advantage, but the most common & best applications are Ung. Petrinum & the Mercurial Oint. 2nd the next Inflammation in order, is that of the Conjunctiva & Cornea. The parts look red, with a hot burning sensation, attended with great pain; & this pain is sometimes extended up to the Forehead & temples. Sometimes the Inflammation exists only in one spot, near the Cornea; this Inflammation rarely affects adults; but is most commonly confined to Children, attended with an inability to bear the Light upon their Eyes. This species of Inflammation is not speedily cured when extending to the Cornea. It generally leaves an opaque spot. Inflammation of the Conjunctiva sometimes spreads over the Cornea; & if not speedily cured produces blindness. It sometimes leaves, what is called an Ulcer. The Causes of this Inflammation are mechanical Violence, 2nd Acid substances applied to the Eye. 3^d Too great exertion of the Eye on small objects. 4th Cold. Too much light & heat, Small Pox, Measles & several diseases: I have seen two cases of

of violent inflammation of the Eye, brought on,
by the persons washing their Eyes with Urine,
which labouring under Gonorrhoea; which
terminated in Blindness. 3. When Inflam-
-ation is seated in the Ball of the Eye, it is
attended with a shooting pain, great sensi-
-bility to light & Fever, which sometimes
runs so high as to produce Delirium -
If this Inflammation is not speedily removed,
it produces blindness. It is sometimes seated
in the Anterior & also in the Posterior Chamber
of the Eye - The first is the worst. Treatment.
Avoid all exciting as well as remote causes; and
Scalps of Iron, & may be lodged in the Eye &
keep up continual irritation. The Pelia,
may grow in such a direction as to do it. 1st If
anything be stuck in the Ball of the Eye, it is
to be removed with the point of a lancet: 2nd
The extraneous matter is to be washed out, by
injecting Milk & Water in the Eye; & 3rd The
the Eyelids are to be inverted, so as to remove
the extraneous matters. Sometimes the Pelia grow
in a wrong direction; & keep the Eye inflamed
by irritating it; this is called Trichiasis. The
Hairs are to be pulled out, & some Authors recom-
-mend touching the parts with Caustic, to
prevent the Hairs from growing again. But
I would prefer dissecting out that portion of
the Eyelid from which the Pelia grow. -
Treatment. 1st Bleeding at the Arm is to
be carried as far as the Patient can bear it,
also local Bleeding by Cupps & Leaches to the part;
& lastly the Eye is to be scarified. 2nd Emmenagogue
Cathartics are to be given, Antimonial powders
answer very well. The application to the Eye
should be of the mildest kind, Cream Tart.
Bread wrapped up in Gaze & dipped in
Rosewater are good applications. I have
found the Bath of Asparagus infused in
water the best wash. Some Authors recom-
-mend the application of Laud^m. I have found
the following a very good wash - R^y Sacch-
-Paterni gr. $\frac{1}{2}$. Tinct. Opⁱ 3i. Acetum 3j. Pit.

Alb. gr ij. Ag. Font. Ziv M. p. in Mist. But
this is not to be used until the Inflammation is some-
what abated. Plasters are to be applied to the Temp-
oral ~~Muscles~~ Muscles behind the Ear, & even over
the Eye itself. The ointments should be very
mild & the Plaster should be covered with
Gauze: This has succeeded, when many other
remedies have failed, & all three fail a Sali-
vation is to be tried. When Suppuration takes
place under the Cornea, an incision is to be made
into it, to let the Pus escape. To all these remedies
a dark Chamber & Low Diet is to be added, as
highly important. The Unguis or thickened portion
of the Adnata is to be dissected off as soon as it
occurs. When Inflammation has produced opacity
of the Cornea, a Salivation has been recommended
& cured; also, a Wash composed of of 1 gr of Corros.
Sublimate & Ziv of water, to be dropped in the
Eye. Powdered Glass, also Molas is a common remedy,
but all uncertain. When there is a possibility
(as there often is) it should be dissected off. Some-
times the Inflammation extends to the Iris, & enlarges
up the Pupil; in such ~~cases~~ cases an Art-
ificial Pupil may be made, unfortunately
in many cases these remedies have failed.
In several such cases I have used Tar water,
with complete success.

Fistula Lachrymalis—
The lachrymal Duct & Ducts ad nasam,
which pass from the Lachrymal sac into
the nose is subject to stricture, or obstruction,
which prevents the Tears from passing down into
the nose; and the sac becomes swelled with
Tears & Mucus, which it naturally secretes. On
pressing this, tears & the mucus is pressed into
the nose or regurgitate through the Puncta
Lachrymalis. The sac is also subject to inflam-
-ation. This is attended with great pain. The
remedies are bleeding &c. This may sometimes
remove it; but ulceration frequently takes
place in the most depending part of the sac,

and an opening, is formed through which the
Tears pass, which opening becomes fistulous.
Hence the name. When we suppose this open-
ing will take place, it is best to make the
incision with a Lanceot & to pass a small probe
with a button head to it, which is made for
the purpose, through the Ductus ad Nasum,
from the opening into the nose. This probe is
to be worn for week or seven months. The tears
then will pass down along side of it into the Nose.
A fine piece of Ad. Plaster is to be applied
over the newly made wound -

Lecture 15th On Cataract.

By the term Cataract, is meant, an opacity of
the Crystalline Lens, or its Capsule. In its comm-
encement, the Patient has dimness of sight, and
the appearance of gauze, haze & before his Eyes,
in most cases it is accompanied with pain. &
in some there is pain & sense of heaviness in the
Forehead. I think, I have observed this more
frequently in Women, than in Men. It most comm-
only affects Old people; but young people are
not exempt from this most terrible disease. I
have known Children that were born with it.
It sometimes affects only one Eye; but when it
proceeds from an internal cause; both Eyes
soon become disordered or diseased. Treatment.
A variety of remedies have been used, as Bleeding,
Purging, Low Diet, Salivation &c. and particularly
when it has arisen from an external cause. Difficult
as the disease is to be removed, yet it has been entire-
ly eradicated, by the power of nature. The
opaque matter has been absorbed, & vision
completely restored. The only radical cure
which is within our reach, is to remove the
Crystalline Lens, from its situation behind
the Pupil. Two applications are made use
of, the first & most ancient, is called Couch-
ing. In this Operation the Crystalline
Lens, is pushed down & depressed to the bottom of

the Eye. The other is called Extracting the Cataract,
in this the Crystalline Lens is entirely removed
from the Eye. I prefer this last mentioned operation;
First, from my own experience, because it is not
so painful, to which I can certify having ex-
-acted the Lens from the Eye of a Man, who had
previously been Couched. He informed me he felt
less pain from this, than the former, 2nd. Because,
it is a much more complete operation than Couching.
When the lens is depressed, it is apt to rise again
to its former situation. It has been said (an objection
to this) that it will be absorbed. I grant that it
sometimes may; but this does not always take
place. I have seen several cases where it was
not absorbed. 3^d. When the Lens is in a fluid
state, it is impossible to depress it, & 4th. When
the Capsule, Lens is opaque, it cannot be depressed
with the needle, & this is a great objection, for
the Capsule is frequently opaque, & when extraction
is performed it can be easily done with a pair
of Forceps. When there is Adhesion between the
capsule of the Lens & Iris. In pressing it down the
Iris is frequently torn: & in a case where depres-
-ion was performed, I saw the Iris destroyed
entirely. When extraction is performed, the ad-
-hesion is torn away by a blunt needle. An
objection to extraction, is said that an irre-
-gularity of the Pupil is frequently produced
by the passage of the lens through it. This is
of no consequence, even if it were the case;
for the vision will be just as good, & it rarely
happens that this irregularity is the consequence.
It has been said again that the Cicatrix in
the Cornea, will prevent vision. Now this
cicatrix is very small & scarcely visible, if
the operation be performed with a sharp
knife: besides, if it was large, it is so low
down, that it cannot affect the sight in the
least. It is said, in extracting, there is danger
of pressing out the Vitreous Humour, but if the
operation be performed this cannot happen;
Even if some of the Vitreous humour, is evacu-
-ated it is of no consequence, since vision will

be just as perfect as ever. It is not said in Extraction
that the Iris is frequently wounded. This (when it
is the case) must be from carelessness; for if the Iris
gets entangled on the knife, the Surgeon with
a finger of his disengaged hand, may easily
draw the Iris from the knife, & then he can with
safety continue the section of the Cornea. From
this it appears, that extraction is suited to every
case of Cataract; Whereas in some cases of
Depression, it will not succeed. Before pro-
ceeding to the operation, the Surgeon should
predict what the possible result may be.
If the Pupil contracts & dilates with the
variations of the light: if the Eye is free
from Disease of every other kind: If the
Patient be perfectly Healthy, otherwise, no
cough, a disposition to vomit: If he is not
subject to Inflammation of the Eyes, you can
with a good deal of safety, promise success.
Likewise, before proceeding to the operation,
if the Patient has Cough, it is to be first cured.
If the Eye be inflamed, the Inflammation is to
be removed. If the Eyelids are Oedematous,
Blisters behind the Ears have been used with
success. If there is pain of the head, it is to
be removed by Purgatives. The predilection
of the Pupil, to contract & dilate, this alone
is not to deter us from performing the operation;
for sometimes it dilates & contracts, when it
is quite unsound. Once performed the ope-
ration, on a Lady, in which the Pupil had
free motion, yet did not restore the vision.
The Eye was affected with Goutta Serena. I
there operated on the other Eye, & she was
immediately restored to sight. This proves,
that the free motion of the pupil is not a good
proof of the soundness of the Retina: & that
when the Pupil has no motion, it may be owing
to the Adhesion between it & the Lens, and
not owing to an affection of the Retina.
The best time to perform the operation is
in the mildest weather: in Autumn or Spring.
In the Summer it is disagreeable to be in Bed;
In winter the Patient is more liable to cough.

The Patient is to be kept upon Low Diet, for two, or three days before the Operation. He should loose a little blood & take a Purgative the day before. The Instruments necessary for the Operation are
1st A knife to have a blade $1\frac{1}{2}$ inches long & a little wider than half the Diameter of the Cornea (say $\frac{1}{2}$ an inch) very sharp on one edge & just at the point, on the other, it is to increase in thickness gradually from the point to the handle so that it may act as a wedge preventing the escape of the Aqueous humor until the section is completely made. 2nd The Needle a little bent at the Point. This is to tear out the capsule of the Lens, and in the other end of the handle of the same instrument, it is convenient to have a small Silver, or Gold Scape, to remove the small pieces of Lens, that remain.
3rd The next instrument is a pair of small Forceps, to catch the Capsule when necessary, & a small Hook to take up the Lens, when it does not come out easily. For Couching a needle is all that is necessary, this is flattened & bent a little at the point. In preparing for the Operation, an assistant is to hold the Head of the Patient back to raise the upper Eyelid. Being seated in a Chair the Surgeon himself is to hold down the under Eyelid. After the Eye becomes steady the point of the knife is to be applied to the Cornea, (which will cause a little motion of the Eye,) after this subsides, a section of the cornea is to be made. The Patient may then be allowed a minute, or two respite. The Capsule of the Lens is to be gently pressed out, through the pupil, & if the Capsule is opaque it is to be extracted with the Forceps. If the Pupil is black, you may see when the opacity is entirely removed. A small compress is to be applied, over the Eye secured by a bandage & the Patient put to Bed. In the application of this Compress, care

should be taken not to apply it too tight lest
it press out some of the Humors. Sometimes the
Pupil of the Eye, is completely closed up, or less-
ened so much as to prevent vision. In other
cases vision is obstructed by a Film growing on
the Cornea, over the Pupil. I mention these
two cases of blindness together, because the
operation for both is nearly the same; that is,
an artificial pupil is to be formed
in the first case, where it originally was;
in the last case, opposite, in a transpa-
rent part of the Cornea. This is to be done
with the knife, formerly mentioned, but
before getting completely across the Cornea,
the point of it is to be made to pierce the
Sclera in such a manner, that a semilunar
section of the Sclera may be made as well
as of the Cornea. The Operation may be
performed in another way: First, pierce
the Cornea, with a knife, as if you intended
to make a semilunar section of it; but
getting across it, retract the knife a
little so as to suffer the Aqueous Humor
to escape. The Sclera will then, in most
instances, fold over the point of the
knife, & thereby continuing the section
of the Cornea, you will find, by the same
stroke, you cut a piece of the Sclera com-
pletely off. After you have done this
there is danger of great inflammation
coming on; which is to be rigidly guarded
against.

Lecture 16th

Of Hernia. By the term Hernia, is meant
a protrusion of a part or parts, naturally con-
tained within the cavity of the Abdomen. The
parts from which such protrusions take
place are first the Umbilicus, Abdominal
Ring, upper & fore part of the Thigh,
under Poupart's Ligament. But it may
take place at other parts. When the protrusion

takes place at the Umbilicus, the rupture is called
Exomphalos, or Umbilical Hernia: When at the
Abdominal ring, it is called Bubonocoele. When
under Poupart's Ligament, Femoral Hernia.
The term Rupture is improper: for it has been
supposed improperly, that the Parieses of the
Abdomen are torn when the Hernia takes place.
But this is not so. The Peritoneum being elastic
pays down before the protruded parts. There is
one exception to this, & that is Hernia Congru-
ita: Here the Peritoneum pays down with
the Testicles long before the Hernia takes place.
The protruded parts are the Omentum, or
parts of the Intestinal Canal, & in some cases, the
Viscera of the Abdomen. The Symptoms are
a swelling, beginning at the Abdominal Ring
& proceeding downwards. The Testicle is to be felt
at the bottom of the Tumor. This is a Bubonocoele.
The Tumor is enlarged by Coughing, sneezing, &
an erect posture; for any thing that presses the
Abdominal Viscera. On lying down the contents
of the Tumor return into the cavity of the Abdo-
men, but appear again as soon as the Patient
rises. The Tumor is attended with little or no
pain. The above described symptoms are, in
most cases sufficiently marked, but it has been
mistaken for other diseases, therefore, we should
be able to make the distinction. The Diseases
with which it is most commonly confounded, are
the Venereal Bubo, Swelled Testicle, Hydrocele
& Boag Abscess. It may easily be distinguished
from Bubo, which is preceded by Phlegmon
& is preternaturally hard, red & painful. This
is not the case with Hernia: it is not painful,
& is attended by the position of the Patient,
& by pressure. In the swelled testicle the
swelling begins in the body of it & proceeds
upwards: but in Hernia, the swelling begins
at the Abdominal ring & proceeds downwards.
A swelled Testicle is hard & prominent,
but Hernia is not prominent. Coughing and
sneezing have no effect upon a swelled Tes-
ticle, but it has upon Hernia. The swelled
Testicle is not influenced by the position
of the Patient, but Hernia is. In Hydrocele
the Tumor begins at the bottom of the Testi-
cle, but not so in Hernia. In Hydrocele

the Tumor is round, & generally transparent; that is, we can see through it, by holding a candle by the side of it. Next it may be confounded with a Lumbar Abscess. I have heretofore told you that in this, the matter passes down & forms a Tumor in the upper part of the Thigh: but in a Lumbar Abscess you can, by pressing on the Tumor & on the Belly of the Patient, whilst in a Horizontal position, distinguish the fluctuation of the Pus. It is of consequence to make this distinction. Hernia is attended with no inconvenience to the Patient only the danger of getting the protruded parts injured, Inflammation, Stricture &c. Therefore as soon as Hernia is perceived to have taken place, it ought to be reduced & a truss applied. For this purpose the Patient should lay on his back, & in most cases, he is able to reduce it himself, by making pressure on it, but if the Patient is not able, the Surgeon is to reduce it by grasping the Tumor & then making a little pressure. The Truss is then to be applied, & worn until the opening which permitted the parts to protrude is closed up. Great care is to be taken in the application of this Instrument. The Surgeon is to feel for the Opening, just at the Abdominal Ring, through which the protrusion has taken place; then apply the head of the Truss directly over the ring. For if he applies it on the Os Pubis the Permeatic Cord, a swelling of the testicle will take place: & if he applies it too high up it will prove ineffectual. But there are cases in which the Tumor is not so easily reduced as heretofore described. The impediments to easy reduction of Hernial Tumors are 1st Where the parts protruded are of great Bulk, 2nd When the parts have been long down & changed their shape; & 3rd When Adhesion has taken place. In such cases, the Patient is first to be laid upon his back, with his Hips, higher than his Head: & with the Patient in this situation, the Surgeon should try to reduce it, Purgatives should be given & an Abstemious diet enjoined. If these remedies are not effectual, it is probable that adhesion has taken place. When we suspect this a suspensory bandage of soft materials is to be worn, so as to prevent

an increase of the Tumor. But, if the Patient is negligent in the application of it, Stricture will take place, which will prevent the easy reduction of it. The symptoms of Strangulated Hernia, are a hardness of the Tumor, Pain, which is increased by standing up. Sickness at Stomach, Vomiting, Postiveness, which is very obstinate, a hard, contracted pulse, & an increase of Heat. If these symptoms be not speedily removed, the stricture at the neck of the Sack, will so much impede the circulation of the protruded part as to bring on Mortification. As Mortification of the part may occur from Inflammation. To relieve a Patient, thus circumstanced, his Lips should be laid higher than his Head. The Surgeon is then to grasp the Tumor & make pressure upward & outward, in the direction of Poupart's Ligament, only rather more upwards, & in this way endeavour to empty the Tumor of its contents: This mode of operation is called Taxis. By perseverance in this way the Tumor may sometimes be removed. If this plan of treatment is unsuccessful the Patient is to be bled ad. Deliquium. Cathartic medicines aided by the action of Oxyters, are then to be tried. I prefer a mixture of Gum. Tart & Pulv. Calapip to be given in small quantities & repeated: For if much be given at a time, the Patient is not generally able to retain it on his Stomach. The warm Bath is next to be used, & the Patient kept in it until great weakness comes on, - & then attempt a reduction to be repeated while the Patient is in the Bath. If this fail, the next & very powerful remedy is an injection of Tobacco-Smoke, or an Infusion of more convenient. Q. Nicotiana Si a. g. Pound lbs, macerate the plant for ten minutes & strain for use. One oz to be injected ~~first~~ at first if the desired effect is not soon produced. The other half is to be given in intervals of an hour. This produces quick relaxation & then if the Taxis be repeated it may be reduced. If this fail, Opium has been recommended in large doses. Next, the application of Ice powdered & put into a Bladder to the Abdominal Ring & Tumor. This has succeeded sometimes & when Ice cannot be had, Cold Water, rendered colder by dissolving salts in it, may be applied. If all these fail, the symptoms may remain stationary, but they most commonly increase. The Belly swells, & vice again takes place. The Pulse

becomes very feeble, mortification takes place & Death closes the scene. After all these remedies fail, it is immediately proper to perform the operation, by which the stricture may be divided after the operation is performed if done early. & In the way I should propose, there is no danger attending, & it is an easy operation. In 30, or 36 hours all these remedies may have a fair trial. During the whole time of the exhibition of these remedies, with the operation, the Patients with his thighs bent on his Pelvis. In performing the operation for this species of Hernia, it has been proposed to open the Sac; but by thus exposing the Peritoneum, we run great risk of bringing on inflammation, & Death of course must follow. Instead of this I do nothing but divide that part of the Tendon which forms the stricture without opening the the Sac. The Operation is performed as follows. First, The Pelvis is to be shaved, & an Incision is to be made with a Scalpel, beginning directly above Poupart's Ligament, two inches from the Abdominal ring & about two inches on the Femur. The Cellular membrane is to be completely dissected until be completely exposed. The Scissors is then very carefully to scratch through the Tendon fibres, with the point of the knife, directly across the Tendon, about an inch above the Abdominal ring. A Director is then to be passed down under the scratched part, & out at the Abdominal ring. The part is then to be cut through by passing the back of the knife along the groove of the Director. By this Operation it is clear, that the Stricturing part will be divided, & that it will be easy in most cases, for the Surgeon to reduce the Protruded part. ~~But in some cases~~ But in some cases, after the stricture is divided, it is impossible to reduce it. This may be owing to adhesions having taken place. It has been objected to the operation that we cannot, by it, have an opportunity of examining the state of the protruded part. This is very true; but if it is improper to reduce them without examining them certainly the taxis is to be used. This mode of operation seldom makes a change in the parts.

End of Lecture 16th

Lecture 17th

Pubonocle, continue d, I know of no change in the Disease, in which the foregoing operation is inadmissible. But in some cases in which the Tendon is divided, the Surgeon is not able to reduce the part; owing to adhesion between the Protruded parts themselves: and in other cases, symptoms of the Mortification of the part, are present; and then it would be highly improper to return the protruded parts, if it was convenient: - Then it becomes absolutely necessary to make an opening into the cavity of the Abdomen, or into the Perineal sac. This is to be done in a gradual & cautious manner, a small opening is first to be carefully made. The finger then to be introduced thro' the opening under the strictured part, & then the parts on the finger are to be divided, by passing a Distal along it. Upon exposing the contents of the Perineal sac, you find that Adhesions have taken place, they are to be divided by the finger, or if necessary, by a knife. If a part of the Omentum is very much altered in its shape, it may be cut off with safety. The stricture is sometimes formed by the neck of the sac, instead of the Tendon, in such cases it may be dissected; a small opening generally answers the purpose. I have already observed, that when symptoms of Inflammation are present, it would be improper, & even impracticable, to return the parts in this situation, such practice would be highly dangerous: Then, the sac is to be opened. The mortified part of the Intestine to be cut out and sutured as formerly described. In such cases, perhaps, it would not be safe, to attach the part of the Intestine, upon the ends are united to the external wound, by a Sitch. If any part of the Omentum is in a state of mortification, the diseased part is to be cut off & if Hemorrhage takes place the vessels are to be secured by Ligatures, & the Ligatures to be brought out at the external wound. The older Surgeons in such cases, before cutting off the mortified part of the Omentum, used to tie a ligature round the sound part of it, to prevent Hemorrhage. This is very improper; for it causes great pain and therefore operations: the external wound is to be dressed with Ad. plaister, & plaisters of lint, spread over them. The interrupted suture is commonly recommended: but Ad. Plaister answers every purpose; except when the wound has been

made too low down, as in the Scrotum. Persons may recover after the last operation, but such cases are rare. I shall read you an account of the only case of this kind that has come under my notice (In this case, the Intestine was in a state of mortification.) The Operation was performed & the Patient recovered. Of Femoral Hernia. In Males this kind of Hernia seldom occurs; but much more frequently in Females, than Inguinal Hernia. The commonest generally takes place, below Poupart's Ligament, on the inside of the Femoral Vein, & forming on the top of the thigh, at its upper part, the part protrude under the Aponeurotic Sheath that crosses the great blood vessels. The Femoral Ligament of Hey forming the stricture (Mr. Puzos first published this) & it was adopted by Hey, hence the name. In performing the operation for this kind of Hernia, I believe it best, in most cases, to open into the sac. This is to be done with very great caution, as the contained parts might be wounded, next the stricture is to be divided, directly in the interval, between the Epigastric Artery & the Spermatic cord, for if you cut on either side, one or the other will certainly be wounded. In performing the operation a very small cut is necessary. In Umbilical Hernia, the same remedies are necessary to prevent stricture, as in Scrotocoele. If these are ineffectual the parts forming the stricture, are to be divided with a Knife. This Operation was performed by Dr. J. P. Dooley, in a case which occurred in the Army House, but the Patient died.

Lecture 18th

On Hydrocele, by this term is meant a preternatural collection of water in the Scrotum & a dropsical swelling of the whole system, of this there are three species. 1st When water exists in the cellular membrane of the Scrotum. 2nd When water is within the cavity of the Tunica vaginalis Testis, & of course in contact with the Testis. 3^d When water is confined in the Spermatic cord. As these different species require very different kinds of treatment, it is of consequence to distinguish them. The 1st

is a symptom of general Dropsy. It is a smooth equal -
Tumor, extending over the whole of the Scrotum, at the 1st
it is soft, but soon changes to a hard Tumor, & an inspection
is made on it after pressing it with the Finger, 2nd The Hyd-
rocele of the Tunica Vaginalis Testis, is a preternatural
increase of that fluid, which naturally moistens the
the Testis. These Tumors generally come on gradually,
but sometimes take place suddenly & is then suppurated.
Tumor commences at the bottom of a Lymphatic. The
generally occupies but one side of it. It cannot
be compressed; when the swelling is small all
the Testicle can be felt; but when large it can-
not. The Tumor is Diaphanous. It has been confound-
ed with other diseases of those parts; it is of consequence
therefore to distinguish them. First, In Hydrocele,
the Tumor begins at the bottom. In Hernia it begins
above & proceeds downwards; & the Testicle is gen-
erally found at the lower & back part of the Tumor.
2nd In Hydrocele the Tumor is permanent: But
in Hernia it can be depressed & pressed in the
abdomen: this is when there is no Stricture. 3rd
In Hydrocele the Spermatic cord can be distinctly
felt. It can be distinguished from the Spermatic cord
by the Tumor, from the Spermatic being harder
& heavier than the Hydrocele, by the Spermatic
cord. It cannot be easily confounded with Hernia
Humoralis or Swelled Testicle for this is generally
attended with pain & most commonly follows
a suppurated Gonorrhoea: These diseases though
sometimes, occur together. The third Hydrocele
is that of the Spermatic cord: here the water is
contained in Cists, on the Spermatic cord, the
Testicle may be felt at the bottom of the
Tumor. The Swelling sometimes extends up the
Abdominal ring, & even into it. This may be
confounded with Hernia, but may be disting-
-uished from it, for in this, by pressing from the
bottom, you compress the whole Tumor, a little
and render it tense; but by lateral pressure you
cannot move it. Whereas in Hernia, you can
remove the tumor, if Stricture has not taken
place. Hydrocele is attended with no other in-
convenience, except what results from its weight
& bulk. In Hot weather though the Skin is some-
times excoriated, yet patients may, by wearing
a suspensory bandage, have the disease so far
removed, as to be of no inconvenience; & not perhaps
have to undergo an Operation. Having thus treated of
the different kinds of Hydrocele, & the method of
distinguishing it from the others, I shall next
proceed to the treatment. In Anasarca Hydro-
-cele, the cure is to be affected by Medical
means & of course does not come under the care

of the Surgeon, though he is sometimes called in to evacuate
the water; for this purpose many methods have been
proposed, the best, & one, I prefer, is by making a
Puncture with a Lancet. The only application
necessary after evacuating the water is soft lint
to the part to absorb the water. This Anasarca of the
Tunica vaginalis Testis, is some-
times produced by the Hydrocele. Treatment
of the Hydrocele of the Tunica vaginalis —
In this little can be done by Medicine.
Dr. Shippen says, he once cured it by strong
cathartics. When in its recent state, I have
frequently cured it, by having cold water
applied on the Tumor from a tea-pot. This
succeeds mostly with Children. A Surgical
Operation is generally necessary to produce a
permanent cure. It consists of two parts, 1st
Evacuating the water, & 2nd preventing its
return. The water may be evacuated with a
Pellotte. I prefer the Lancet, & immediately
introducing the Canula, through the orifice,
for the evacuation of the water; for, if this is
not done, it will get into the Cellular Membrane
of the Scrotum, & produce Anasarca, & it then
cannot be easily drawn off. After it is drawn
off through the Canula, a piece of Ad. Plaister
is to be applied to the puncture & the suspensory
bandage put on. Simple as this operation may
appear, I have heard of cases in which three
Surgeons of eminence were completely foiled
in their attempts to evacuate the water, & the
pushed the Trocar into the Body of the
testicle; as Dr. An: Hunter (who was sent
for) afterwards found, by making prepuce
on different parts of the tumor, & requesting
the Patient to tell him, when that peculiar
sensation took place, (which always happens
on pressing the tumor on the Testes themselves)
by this simple method he found that the
testicle was situated on the Anterior, instead
of the Posterior part (which is commonly the case)
of the Tumor. The means of a radical cure
are several: — the object of them all, to produce
inflammation, within the cavity of the Tunica
vaginalis Testis, & on the surface of the Test-
icle, so that they may adhere; the Cavity will
be completely obliterated, & probably a rec-

urrence of the Disease prevented. It has been recom-
mended to apply Caustic; so as to corrode the Prostatum
& leave the Testis bare the whole length. Mr. Pize im-
proved on this, by applying a smaller piece of Caustic;
(about the size of an English Shilling). The objection
to the use of Caustic is, that it produces great infla-
mation over the whole Prostatum, & subjects the Pat-
-ient to the inconvenience of a large suppurating
sore: & 2nd the inflammation is proposed to be prod-
uced, by the introduction of a Seton through the
Tumor. A Tent is sometimes used for this purpose,
& a Canula pushed & left to stand. Mr. Patt impr-
oved this method by using a large Trocar and
needle, armed with a Rein of silk. The Tumor
was perforated on both sides. The Trochar was
then removed. & the Canula passed to the other ^{part} of
the Tumor: the Trocar was again introduced through
the Canula & the Tumor perforated below. In this
way a Seton can be put in with safety, & no danger
of wounding the Testicle. By this means inflammation
is frequently produced; but in some cases it fails
in producing a cure. Sometimes the parts only adhere
they are not completely round the Testicle, & are inclosed, so that
the Disease is liable to return: besides, the patient is
confined to his Bed, for some time, & has all the
inconvenience of a suppurating sore to undergo.
Again, when the disease is treated in this way, or
with Caustic, the Surgeon cannot examine the
State of the Testicle, which is frequently in a dis-
-ordered State. Sometime Schirrhous. Sometimes
the water is confined in Cysts, adhering to the body
of the Testicle of late years. Mr. Sadrer Carter
has revived a practice, which was in use among
the Ancients; which is, the injecting of stimulating
substances into the Prostatum, after the evacuation
of the water. He proposed less stimulating than
formerly used. He uses for injection Port Wine
or Wine & water, in the proportion of 2/3 wine &
1/3 water. The instruments necessary for the
operation, are, a Trocar & Canula, with a
handle to it, & a Gum Elastic Bag, or a Bladder
with a Stop cock to hold the urine. The Trocar
with the Canula with the Canula is to be plunged
deep into the Tumor. The Trocar is then to be
removed, & the water suffered to run out through
the Canula: when it is all nearly out the urine
is to be injected & kept in for 3, or 4, or even
10 minutes, in the Prostatum; or until the Patient
feels some pain in the part. In many cases he im-

mediately feels great pain in the back, & in some cases faintish. Sometimes no pain, but after the urine is suffered to escape, a piece of Ad. Plaister is to be applied to the Puncture, & he is to be kept in Bed, with his thighs closed together: and a Towel doubled up, is to be placed under his scrotum to support it. In 3, or 4 days, inflammation generally takes place; & if it runs high, a soft Poultice is to be applied to it, so as to keep it moist. In 8, or 10 days the inflammation generally subsides, & by this time Adhesion takes place between the Proctum & the Tunica vaginalis Testis. I observed that the Trocar should be plunged deep into the Proctum; for if it is not, when the Trocar is partly escaped, the Tunica vaginalis will slip off the Canula & water get into the Cellular Membrane. In one case, that I saw the whole Proctum slipped off & left the Testes bare, owing to the Urine getting between the Membranes. This Operation sometimes fails & on this account the Surgeon should always inform the Patient, that the operation may fail but if it does there is another that will succeed. If this Operation does fail the first time (it will always be proper to try a second) but if it fails the second time, it is proper to propose the Operation practised by Mr. John Hunter. This is done by making an incision through the Proctum into the Tunica vaginalis Testis, suffering the water to escape. Then examine the Testicle & if it is in a diseased state it may be immediately removed provided the Patient will submit to it. But if the Testicle is found in a sound state, the wound is to be kept open by two Hooks, held by two assistants, until the Surgeon pushes small pieces of Dough into the cavity of the Tunica vaginalis Testis (until it be completely distended) after this Linch is to be applied between the cut edges of the Tunica to prevent their adhering too soon. The Dough will produce universal inflammation, and as the Tunica adheres to the Testis the Dough will be squeezed out with the matter. This Operation, I have performed on myself, with complete success. Fistula in Ano. This is always the consequence of inflammation in the Cellular Membrane, or adipose, near the anus. This terminates in suppuration. The Abscess is to be opened & if the sore does not heal readily, the Opening becoming Fistulated, & this constitutes "Fistula in Ano". Sometimes this Abscess has an opening into the Rectum & one, or more externally, near the Anus. It is then called a complete Fistula. Sometimes also there is an open-

ing externally, without any communication between
the Abscess & Rectum. The Fistula is then called
incomplete: & sometimes there is an opening from
the gut, without any external opening. The
Fistula is then called an Occult or Blind Fistula.
The causes of this disease are the same, as, produce
inflammation in other parts. This disease is frequently
confounded with Piles, & whenever we have a Patient
complain of pain in the part, about the Anus, we
should immediately examine them: & whenever
there is an inflammatory Tumor, seated near the Anus,
the Antiphlogistic remedies are to be used.
Bleeding, Purgings, Low Diet &c. If a Purgative
come on, the water is to be drawn off with a Gum
Elastic Catheter. If on examination we should
find Pus formed, we should not hesitate to
open the Tumor, & evacuate its contents.
It will frequently heal as readily as an Abscess
on any other part, the Healing of the Abscess
tho. is sometimes prevented, by the healing of the
external Orifice, before it heals from the bottom.
When the Fistula is complete, Feces & wind are
discharged by the opening, & when it is common
to see Blood discharged from the Fistula. This
proceeds from the irritation of the Feces.
When the Fistula is occult, the Feces pass down
into the Rectum & form a hard Tumor, or in
the neighborhood of the Anus. The Operation
for the Cure is very simple, & consists in divid-
ing the part between the Rectum & Fistula,
with a Distoury, so, as to open the cavity of
the Fistula, with the Rectum, this is done by pas-
sing the Finger into the Rectum, & then Dis-
torting up the Fistula, guarded with a silver
plate, or what answers the purpose, having the
edge of it covered with a piece of waxed Linen,
so as to keep it from cutting until, it is introduc-
ed, the strip of Linen is then to be pulled off
by an Assistant. With the Distoury thus passed
up the Fistula, & the Finger (well oiled) up the
Anus. The Surgeon is then to bring the point of
the Distoury up the Finger, & both drawn out, so
as to open the Cavities of the Fistula & Rectum into
one. The Patient is to be put to bed & the sore dress-
ed with simple Ointment. For a full account of
Fistula I refer you to Dr. Pott.

Lecture 19th

On the Stone. Calculous concretions form on many different parts of the Body, as the Liver, Lungs, Brain &c. - I once found a Calculus in the root of the Tongue. But they are most frequently generated in the Urinary Organs; & from common concretions, formed on vessels for the reception of urine, it is proved, that, urine naturally abounds with Calculous matter. There is more of this Calculous matter in the Urine of some persons than in others, & the introduction of a solid body to act as a nucleus, seems all that is necessary to the formation of a Stone. This is proved by a Stone being found on a Bullet, or other extraneous matter, that has been found in the Pelvis, the Kidneys, or the Bladder: I once saw a calculous concretion formed on the end of a silver Catheter, that had been necessarily left in the Bladder. Stones are found in Layers & are very different as to density, Colour &c. - Some being hard, some very soft, some white & others Brown &c. I saw a Stone which was taken from a Horse in which a common Pig acted as a nucleus. Stones are found in the Pelvis of the Kidneys, in the Ureters, in the Bladder & sometimes in the Prostrate Gland. I believe stones are most commonly first formed in the Pelvis of the Kidneys, but not always, for they are sometimes first formed in the Bladder. The symptoms of Stone in the Bladder are, heavy obtuse pains in the Loins, which become more acute by bending the Body, followed by Copper colour- ed & bloody Urine. By the irritation of the Stone in the Bladder inflammation comes on, & the following symptoms take place, Pain, Fever, Costiveness, &c. complaints with great flatulency, Nausea &c. - & sometimes affair in the side. When the Stone passes into the Urethra, the above symptoms continue, but the pain is felt lower down. In such cases after Bleeding, the use of the warm Bath, Opiates &c. should be then tried. We should then endeavour to evacuate the Stone, by giving the Patient diluting drinks, as Barley Water &c. in large quantities. I request him to retain his Urine until his Bladder is very full, & then with his Body bent, expel his Faeces as forcibly as he can. In this way, the Patient

sometimes expels the Stone, along with his Urine, when the stone has got into the Bladder. There is great pain & itching in that part where the Stone lies. The Urine voided from a Calculous Patient is Pale, Turbid & of a very foetid smell; frequently mixed with Mucus or purulent matter & after exercise the Urine is bloody, when the irritation from a Stone in the Bladder is very great. Prostratus Ani & Hemorrhoids take place; The Fever runs high, there is great pain, Want of Sleep, bad digestion &c. If the Patient be not relieved Death takes place. These Symptoms arising from other causes than One, as diseased Prostate Gland, or an Ulcer, or other diseases of the neck of the Bladder, a Tumor in the Rectum & pressing on the Bladder &c. I have heard of a Young Lady, who had many of these symptoms produced by a Tumor in the Rectum, which pressed upon the Bladder. This Tumor was not discovered until after her Death, & it might probably have been extirpated. I had a Young woman under my care who had many of the symptoms of Stone (without one). I salivated her & they entirely disappeared. In this case, I suspected an Ulcer at the neck of the Bladder. Hemorrhoidal Tumors, sometimes produce symptoms of stone. Sometimes tho' a Stone, may exist without producing any of the above symptoms. Where small pieces of Stone are discharged from the Bladder, attending that one exists, but the only true test is the use of the Sound & by this means, & by repeated and careful examination, the existence of one can generally be ascertained. When this is proven there is no cure but by a Surgical Operation. Many remedies have been proposed for the cure: Injections in the Bladder to corrode & dissolve it. But they have as yet been unsuccessful. Soap Pills, Solutis water, Cal. Soda. Lime Water, Uva Ursi & many other articles have been used without success. They frequently give temporary relief to the Patient, & that is all. With respect to substances injected into the Bladder, an objection applies to all of them; & that is, that any substance capable of dissolving the Stone, would at the same time, produce great inflammation & Rupture of the Bladder. A Bit of the Stone is best treated by Bleeding, The Warm Bath, Opiates, & Demulcents. Drink. If a small Calculus should get into the Urethra & there lodge, producing pain and

suppression of urine, it is to be extracted. Dr. John Hunter has invented a small pair of spring forceps with a Canula for this purpose, the Canula is to be pushed into the Urethra, completely down to the Stone. The Canula is then to be withdrawn, so as to let the Blades of the Forceps open — The Canula pushed on again so as to close the Blades on the Stone. In this way it can frequently be extracted. I have often succeeded in removing small Stones from the Urethra, by means of a Probe, with a flat bent point, in the form of a Hook. If the stone cannot be extracted in this way, an incision is to be made down on it, through the Urethra & the Stone removed. I shall now shew & describe to you the method of performing the operation, for the Stone in the Bladder. I shall first show you the instruments that you are to be provided with. The first thing wanting is a Table of proper dimensions; a common Dining Table will do, the leaves down answers very well. This is to be covered with two, or three blankets, a sheet & a Pillow kept, a couple of pillows, with slip knots, to bind the Patient's hands & feet together. Then a Groove Staff, a Scalpel & Sharp pointed Distensor; Forceps of different sizes, a Hook & Syringe, Sweet Oil, warm water, Sponges, Emaculum, Needles, Ligatures &c. The evening before the operation, the Patient is to have his Bowels evacuated & the morning before the operation, is to have a Clyster administered; & about half an hour before the operation is to have a dose of Laudanum. In addition to this, it is proper for the Patient to retain his Urine for some time previous to the operation. When laid on the table, the Surgeon is to introduce the groove staff. The Patient's hands & feet being bound, is to be held by a couple of Assistants, & another is to hold the Staff, so as to make it press on the Perineum, on the left side of the Raphe. The Surgeon is then with a Scalpel to make an incision, beginning at the Raphe above & continuing down on the left side, between the Tuberosity of the Oscheum & the Anus; Then with the Distensor, with the back of it towards him, he is to perforate the Urethra, directly down on the groove; & divide the soft parts, by running the Distensor with the point in the groove of the Staff. He is then to take the Staff in his own hand (the left hand), & the Gorget in his right hand — He is now to place the point of it in the Groove the Staff is then to be raised by a perpendicular with the Patient's body, & the neck of the Bladder

Bladder to be divided, by passing the Gorgot directly in, taking care to depress the Handle: If it passes otherwise the back would be apt to slip out of the Gorgot; after this the Staff should be removed. The Surgeon before removing the Gorgot is to pass his finger along the upper part of it, under the Bladder, and feel for the Stone - He is now to pass the ~~Forceps~~ fully removed, taking care that it does not cut as it comes out. The Stone, or Stones are to be removed with the Forceps, Scoop &c. & the small pieces may be washed out with a Syringe. The Bladder is carefully to be examined, in order that a particle of the Calculus may not be left, & to be syringed with warm water. The Patient is then to be put to Bed, on his side, with his knees together (No Dressings are necessary) - In Operating on Children, just as you are pushing the Gorgot they are apt to strain for some time, & by the Diaphragm & Abdominal Muscles, to force the Intestines down, so as to compress the Bladder & endanger the wounding of the Fundus of it, with the Gorgot, on this account, it is always very practised to wait until this straining goes off - - -

Lecture 20th

On Aneurism - "by this term Aneurism is meant a morbid dilatation of the Heart or any other part of the Arterial System. They are divided into True or False. The True is where there is a simple dilatation of the Heart & Artery - As I have already treated of wounds of the Arteries, I shall say nothing farther on False Aneurism, but proceed to the consideration of true ones - An Aneurism is always owing to a disproportion between the momentum of the Blood & the power of the vessel, at the part, where it takes place. With the remote cause of Aneurism we are not well acquainted. Hard Drinking is said to dispose to Aneurism, Violent Sports, or a Contusion of a part, is often the remote cause. The partial division of the coats of an artery, is also said to be the cause of Aneurism at that part: But Mr John Hunter's experiments prove that this is not the case. He dissected off the external coat of the Carotid Artery of a Dog, until the Artery was so thin, that he could see the Blood.

through it. He suffered the Dog to live for several weeks, then killed him, & found no dilatation had taken place. It is supposed that bleeding, when the external coat of an Artery is wounded, & the internal is unengaged, that such a partial wound may give rise to Aneurism, that the internal coat will prolapse through the wound, & in this way give rise to an Aneurismatic sack. But such a case, I believe never did occur. A diseased state of the Artery is necessarily connected with aneurism. The internal surface of the Artery becomes stiff & ossification takes place, this certainly lays the foundation for one, & this ossification of the Artery takes place, without any evident cause. They are said to be more common in men, than in women - their Arteries being in a sound state; but occur in general with persons somewhat advanced in life. It is of great consequence to distinguish between the Aneurismatic Tumor & a common one. In a recent Aneurism the tumor is small & the Pulsation distinctly felt. But in an Old Aneurism this is not the case; for the Blood in the Tumor is coagulated & the Pulsation is with difficulty felt. The Skin on the Tumor is natural until it becomes large, then it Ranges. In a recent Aneurism by Pressure you are able to remove the Tumor. But as soon as pressure is removed, the tumor returns, on the contrary, in an old Aneurism you are not able to obliterate the tumor altogether altho, pressure may lessen its size; it may happen that a common tumor may be situated in the neighbourhood of an Artery, so as to have a Pulsation given to it, by the Artery. Such a Tumor can generally be distinguished from an Aneurism, by putting it up from the Artery (when it is fragilible) & the pulsation of the tumor will cease. But generally it cannot be raised from the Artery. In this case, it is to be distinguished by the Pulsations not being felt in every part of the Tumor, though this is not to be observed in an old one. When it is situated in the Thorax, there is an irregularity in the Pulse. Pulsations of the Heart, & difficulty of breathing. When it becomes very large, the skin from pressure sloughs off, the Aneurism bursts & Death is the consequence of a profuse Hemorrhage, that takes place. Death may occur from the bursting of an Aneurism internally, as from its pressure on parts essential

to life, as the Trachea, Bronchia &c. On making an examination of an Aneurism in the Head Body &c. we find frequently that a dilatation of some one of the Arteries has taken place; principally on one side, & this is most likely to take place, when the Aneurism is at the bend of the Arm & curve of the Aorta. It takes place, also, at the place, which receives most force from the blood, we find also that the Aneurismatic sack is as thick as the Artery, a proof that new substance is formed, which is condensed cellular Membrane, & the sack is formed entirely of this; for it is also probable that, that part of the Artery which is dilated is absorbed. We find within the Cavity of the sack, masses of coagulated blood. Opificiations are also met with on the internal side of the Artery. The Disease has no power of cure within itself, & very little can be done with medicine. when it is seated internally - Rest, a low Diet, &c. to weaken the action of the heart, & thereby lessen the force of the distending power. This may prevent increase of size, but cannot cure it. But when Aneurism is seated on a limb, before on the Aneurismatic tumor is added to the remedies. It is said that this method has succeeded, but I have seen it tried without any good effect. These Tumors are liable to take place in every part of the Arterial system; but the most common place is the Ham, forming what is called Popliteal Aneurism. This is a small tumor in the Ham, attended with little or no pain, but with a strong Pulsation, afterwards pain comes on. This is produced by the tumor pressing on & distending the large nerves that go into the Leg. The Leg becomes Oedematous from the tumor pressing on the veins & Lymphatics, obstructing the Circulation - For the Cure of Aneurism the old surgeons recommended a Tourniquet to be applied to the upper part of the limb: the Tumor then to be opened and the Artery searched for as it passes into & out of the tumor; and tied at those places. The Tumor was then to be removed - Almost every person that was treated in this way died from Hemorrhage & it was supposed in those cases that the Ligature slipped off; but the truth was that the Artery was always tied in a diseased state of the part & the sides of course would not unite. On account of the bad success which attended the Operation, amputating the limb about half way between the knee & hip

was next resorted to; this was generally successful - Mr. Hunter having observed that Aneurism was always preceded by a diseased state of the Artery, & that Amputation was successful, took up the Idea, that the disease might be cured by taking up the Artery about half way between the knee & Hip. In the course of a short time after this an Aneurismatic Patient came under his care, he performed the Operation in this way, & with complete success. Since then it has been frequently performed. (This was certainly a great discovery) In this Operation the only instruments that are necessary are a Scalpel & needle armed with a Double Ligature. - Before proceeding to the Operation a Tourniquet is to be applied, properly on the limb. The Surgeon is then to make an incision about 4 inches along down on the Sartorius Muscle about the middle of the thigh; he is then to dissect away the cellular substance & raise the lower edge of the Muscle up (as the Patient lays on his back). This is best done with the Handle of the Knife, for in this way none of those small Arteries are divided that might be near the tumor, & the discharge of Blood from them might impede the Operation. The Surgeon can then by, pressing his finger, under the Sartorius Muscle feel the pulsation of the Artery. There is next a small tendinous fascia to be divided, not directly over, but on one side of the Artery. The blunt pointed needle armed with a Double ligature is now to be passed under it & then to pull the Ligature up & feel if it stops the Pulsation below; if it does you are certain you have the Artery. The Ligatures are now to be divided & tied on it, about two inches asunder & the Artery to be divided between the Ligatures. Nothing is to be done to the Aneurismal Sack. In a short time it will suppurate & is then to be treated as a common Abscess. The wound, made to put on the Ligatures, is to be closed; & to close it from the Bottom a compress is to be applied on each side of it & Adhesive Plaster applied. In 10, or 12 days the Ligatures will come away & the wound will completely heal. The Aneurisms which occur after Venesection are of three species 1st False Aneurisms sometimes follow. 2^d Pectus from wounding an Artery, 3^d Varicose Aneurism: in this, the Orifice, in the Posterior part of the Vein, is in exact apposition

to that of the anterior part of the Artery, & the Blood flows directly from the Artery into the Vein and produces a varicose state of all the Veins from the Elbow up to the Shoulder. This is attended with no danger and requires no operation. The Veins have a thrilling sensation, & I believe never dilate so much as to burst. A species rarely occurs, is when there is a complication of False & Varicose Aneurisms. In False Aneurism the Cellular Substance becomes condensed about the tumor, & is that which forms the sack —

Lecture 21st

Of Amputation of the Limbs.

I have already spoken of those causes requiring Amputation, in my Lectures on Fractures, Luxations &c. I will now enumerate them. In Compound Fractures of the Bones of the Extremities, when the soft parts are so lacerated & disorganized, that a sufficient quantity of Blood cannot pass down to nourish them, Amputation should be immediately resorted to, because, if it is delayed until suppuration is established, the Patient is subjected to a long suppurating sore and is in danger of Pectic Fever. Amputation is the more necessary, when together with the injury, cavity of a large joint is opened. I have already told you that it is improper to amputate while Mortification is progressing, for it will generally take place in the Stump. It was the Practice of the old Surgeons, to amputate under such circumstances, and I was once, by the solicitations of my Patient obliged to do it. — But in this case after a few days, Mortification seized the Stump & Death took place. After the Mortified parts have separated, the Surgeon has very little to do, except to cut through the Bone, for it is frequently laid bare. But upon the separation of the dead parts, have left a rough, unsound Stump, I believe it would be best to cut down just above this, so as to make it even. This though should be deferred for a considerable time after the dead parts have separated until the disposition of the Stump to Mortification is completely gone away. On the Disease called White Swelling, which affects the joints & particularly that of the Knee after trying to cure it & failing; & the Patient is sinking under Pectic Fever produced by the

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disease - Amputation is to be resorted to - You ought
not to be deterred from performing the operation from
the debilitated state of the Patient, however low he
may be, if the Stomach is in a good state; for the
Amputation in almost every case puts a speedy
stop to the Night sweats & other febrile symptoms;
& the Patient recovers very fast. There are a vari-
ety of Tumors also, which require Amputation
particularly the Fungous Hematomas of Mr. Keys.
These are also cases of Ulcers, particularly on the
lower limbs, that refuse to heal when the Bone
is Carious & requires to be Amputated. But I
am happy to say, we seldom have to operate from
these causes - We generally can cure Flegms, however
extensive they may be, & even when the bone is
in a Carious state. These are the principal cases
which require Amputation. I shall now speak
of Amputation of different parts. First of the
Finger: This is seldom necessary, for in most cases
of Ulcers of the fingers, however bad they may be,
& even when attended with Caries, they can generally
be cured. Some have supposed a compound Lux-
-ation of the Thumb, or Finger to require Am-
-putation; but this is not so. The Finger or Thumb
so luxated is to be reduced as soon as possible &
then the best application is a Bread & Milk
poultice. Bandages & Plints have been used
but these stop the circulation through the Finger.
When the extremity of the Finger is to be taken
off, it may be done by amputating the Finger
at the second joint; this is to be done by pulling
back the integuments as much as possible and
then cutting through them: - Then through
the Ligaments with a Scalpel, the soft parts
are then to be drawn down over the Bone and
kept so by Ad-Plaster. A Plaster of Gypsum
& a Bandage. It is seldom necessary when the
Finger is amputated, to secure the Arteries by
ligatures; the compression will generally stop
the Hemorrhage. Sometimes it is necessary to
take the Finger off, at the first joint. The Met-
acarpal Bone. Here it is best to secure the Ar-
-tery by a couple of Ligatures. The sound ad-
-jacent Fingers are then to be pressed together
and kept so by a Bandage; taking care first
to place a bit of lint, spread with simple
Gerate on the wound. Sometimes it is necessary
to take off with the Finger, a portion of the
Metacarpal Bone. Before proceeding to the
Operation a Tourniquet is to be applied on the Arm.

The soft parts between the fingers, are then to be divided on each side of the Metacarpal Bone to be operated on, & the Bone to be divided with a Metacarpal saw. The divided vessels are to be secured by Ligatures; the hand then to be pressed laterally, so as to bring the adjacent fingers into contact. Liniment spread with simple cerate is to be applied and a Bandage put round the whole. These operations are very easily performed but are rarely necessary.

Amputation of the Thigh; First of the Instruments & Dressings that are necessary, before proceeding to the operation. These are a Tourniquet, a compress bandage to put under the Tourniquet, a long knife, a Scalpel, Retractor, a saw, a pair of Bone knippers, Tenaculum, Needles, Ligatures, Sponges & warm water. The Dressings that are necessary are strips of Ad. Plaster, Rollers, a large plaster of simple Cerate, spread on Linen, & some Tow. Half an hour before proceeding to the operation the Patient is to take a dose of Laudanum. A proper Table is then to be procured covering it with two, or three Plankets & a Roller. The Patient is then to be placed on his Back, with his Feet & knees as near the end of the Table as possible, so that his lower extremities may hang over the end & supported by an assistant. The compress bandage is then to be put on the upper part of the Thigh, directly over the Artery. The Surgeon is then to Buckle the Tourniquet directly over the Bandage. Then to place his finger on the Anterior Tibial Artery on the Foot, & with his finger in this situation, he is to request an assistant to screw up the Tourniquet as soon as he perceives the Pulsation has ceased in the Artery below where may take it for granted, the circulation is cut off. An assistant is then to hold the Screw of the Tourniquet to keep it from moving, while another grasps the thigh just above where it is to be taken off & to draw the soft parts up, so as to render those below tense. The Surgeon then with the large knife, is by two strokes to divide the skin & cellular Membrane down to the Muscles. In doing this, some Authors recommend recommending the Surgeon to stand on the inside of the Limb. I generally stand on the side which is most convenient to me at the time - of operating without regard to this direction. After the soft parts are divided down to the Muscles; they are then to be directed off

from the Muscles, for about an Inch, with the Scalpel
in order to leave soft parts enough to cover the stump
with old skin. This being fold'd back & held by an
assistant, the Surgeon is then with the large knife,
to complete the division of the soft parts down
to the Bone. When this is done, some surgeons recom-
mend the Periosteum to be scraped from the
Bone, where it is to be sawed. This I conceive to be
useless. The Retractor is then to be put on, with
the end that has the slit in it, uppermost & the soft
parts to be drawn back by it. The Surgeon is then
with the saw to divide the Bone, the Retractor is
then to be removed; after which the Femoral Ar-
tery is to be drawn out with the Tenaculum, &
the Ligature applied. I prefer the use of the
Needle here, to simply tying the Artery, because
with it a portion of the soft parts around the
Artery can be secured in the Ligature & more
completely secured. The Tourniquet is now to
be loosed, & if any vessel is seen to bleed it
is to be secured. The Tourniquet is now to be
taken completely off & the Dressage applied
to the stump, beginning the application of it
by passing one turn of it round the Pelvis,
continuing down on the Bone. The coagulated
blood is then to be wiped off, the edges of the
Skin to be brought into apposition, with the
Ligatures, out at one corner, taking care to
place a little slip of linen spread on each side
with cerate, between the skin, in order, to keep
it from uniting by the first intention, before
uniting from the bottom, otherwise, an Abscess
would be formed. Strips of Ad. plaister are
now to be applied over the stump in order to
keep the soft parts in their situation. The linen
plaister of cerate is then to be applied over the
stump and Tow over this. The Roller is to be contin-
ued down, over this the Tow doubled over the end
of the stump - so as to keep on the Dressings. After
the stump is dressed, the Tourniquet should be applied
loosely on the upper part of the Thigh to be ready
in case of a second Hemorrhage. The Patient
is to be put to Bed with a pillow under the stump,
& a Cradle constructed for the purpose is to be
placed over it to prevent the pressure of the Bed
clothes. When the leg is to be amputated & it is
in the power of the Surgeon to save the principal

part of it, it has been a question, where abouts the operation should be performed. Mr. Pott and others contend that, as much of the Leg as possible should be saved; because the person may get a cork foot made. This is true: but in this case the weight of the Body has to rest on the tender cicatrix & this is apt to ulcerate & become a continual source of trouble: & if the Patient, is to rest on his knee or a wooden leg, the shorter the Stump the better: Therefore I should recommend the Stump to be taken off about 4, or 5 inches below the knee. To Amputate the Leg, the same instruments are necessary, as well as described, with the addition of a Catlin to divide the flesh between the Bones. The Retractor must also be made with two slips instead of one, so as to pass one slip of it between the Bones. In securing the Vessels, a Needle is not necessary: They should be drawn out with the Tenaculum, & secured by ligatures. In Amputating the Leg, as the Bones are thick covered before with soft parts, I always leave a Flap behind: This, by bringing it forwards, closes the Stump completely.

Lecture 22nd

On Harelip: This, I believe is always seated in the upper lip, and has its name from its supposed resemblance to the Lip of a Hare. It is sometimes single & sometimes double. Children are most commonly born with it, but it may arise from an accidental cause. When Children are born with it, there is sometimes, besides an opening in the lip, one extending into the Palate, between the Maxillary, & Palate Bones; which opening forms as communication between the Mouth & Nose, so that when the Child attempts to swallow, the fluid part of its Aliment passes into the nose. Sometimes a Tooth or a piece of Bone projects into the opening. When it arises from accident it is to be treated as a wound, as already described. When Children are born with it, it is to be reduced to the state of a recent wound, by cutting away the Callous edges, completely up into the Angle above, & the fresh edges brought together, and retained so, by the twisted, or interrupted sutures; the first is generally preferred. When a Tooth, or piece of Bone projects into the opening, it must be extracted.

It has been doubted whether this Operation, should be performed in Infants: But I know, from experience, that it may be done with safety: especially if they cannot suck well, it should always be done, after they have become two months old. When the Hare lip is double, the Operation should be performed on one at a time. The intermediate portion of lip is put so much on the stretch, that it would be apt to mortify. I shall next show you, the Operation as it can be very well imitated on the dead subject. First with a pair of scissors, pare off the callous edges. After this is done & the Hare lip reduced to the state of a recent wound, the edges should be brought into complete contact, on opposite sides. Two silver pins, with sharp points of steel, are then to be passed through the edges of the wound & Ligatures to be put on each of them, in the form of the figure 8, after the Ligature is applied the steel points are to be removed. This operation is very simple & most commonly & generally answering the purpose. At the end of 4, or 5 days adhesion will take place & the Pins are to be drawn out; but as the Ligatures generally adhere, by means of the Scabs, it is best to leave them to drop off, for when suffered to remain on they give support to the lip, thereby answering every purpose of a Plaster & rendering the Adhesion more certain.

Lecture 23^o

I shall next show you the mode of extirpating the Testicle, when necessary. In judging of the probable success of the Operation, it is necessary to ascertain, whether the Disease is confined to the testicle exclusively: for if the Spermatic Cord is affected with hardness & swelling during the whole length, the Operation would be fruitless, as the Disease would be repeated in the Abdominal rings. But if the Spermatic Cord is unaffected for an inch or an inch and a half below the Abdominal Ring, then the Operation may be performed. The Incision is to be made on the Spermatic cord, about half an inch above the uppermost part of the Disease, to be continued down to the bottom of the Tumor. First to the Body of the Testicle, & by continuing the incision in to the Testicle we can completely ascertain whether it is cancerous or not, if not, we can desist from operating: This direction, is the more necessary, since some Surg.

sons have been so unfortunate as to extirpate testicles that were not diseased, for not cutting into the substance of the Testicle. It is next to be dissected out from the Scrotum, & the dissection continued up into the course of the Spermatic Cord; so as to separate it from the Testicle, to about an inch above the diseased part of the Cord, a ligature is then to be applied, around the sound part of the Cord, & the diseased part to be removed, some Surgeons recommend tying the Cord, so as to check the circulation for a time, & after the diseased or hardened part of it is removed, to draw out the Spermatic Artery with a Tenuaculum & tie it up alone: this is wholly unnecessary, for a ligature is much more easily applied in the whole Cord & answers every purpose. The pain is certainly very severe, but is last but for a few days moments. The sides of the wound are now to be joined in the Scrotum by two or three stitches of the interrupted suture.

Lecture 24th

On Polypus, or Nasal Polypus.

This disease consists in a thickening or growing from the Schneiderian Membrane. It generally commences about the Superior Turbinate Bone. It is most commonly of a Pale colour, but this varies. It is in most cases insensible, but in some it is attended with great pain. When it becomes large it renders breathing difficult. Sometimes it grows downwards, & in some cases, besides this, it enlarges so much as to protrude backwards, through the Posterior Nares into the Throat. For a History of the Symptoms of this disease, I refer you to Mr. Keil. A Polypus should be removed as soon as possible: There are 3 modes of removing it. 1st By passing a ligature tight around the root of it, so as to prevent the Circulation into it, & in this way it soon mortifies & drops off. The 2^d mode of removing them is, to take hold of the Body of it with a pair of Forceps & forcibly to tear it away. The most convenient ligature is a fine wire, passed thro' a double Cambric, so as to form a loop to pass on the root of it, & in this way to put a stop to the Circulation. This though is a tedious way: about the time the Polypus is to separate.

the Surgeon must be very attentive; for it may be so large as to strangle the Patient. In such cases, it is best to tie a piece of Tape around that part which projects into the Fauces, so that when it separates, it may be drawn out. I succeeded in a case lately in the Pennsylvania Hospital, by tying a piece of Tape around that part which projected into the Fauces. I believe when the case is, as described above, it is the best method. These Venorrhages, which has been so much dreaded is very trifling, the Vessel being so much lacerated by the Operation, bleed very little. When treating of inflammation, I explained to you the Formation of Schirrhous Tonsil. The Tonsil in these cases, is not schirrhous, as supposed. It is sometimes so large as to impede the voice & in these cases, is to be removed by a wire & double Canula, the same as used in the removal of Polypus. After remaining in 4, or 5 days, it will produce a separation of the Tonsil. But securing the Canula in the Nose is very inconvenient. — Therefore after it has been on about 2 days, it being sufficiently dead, it is to be cut off close to the Ligature, by means of a pair of curved Scissors. The Canula & Wound will then come away.

Lecture 25th

Ascites

We are sometimes called on to remove the water, in cases of Dropsy of the Abdomen, by tapping. But before proceeding to this Operation, & particularly in Women, we are to be sure that water really exists. This is done by placing one hand on one side of the Belly, & with the other gently patting the other side of it, (in this way if water exists, you can feel the undulation) This is more necessary in Women, because Pregnancy is sometimes mistaken for Dropsy. At once happened that a celebrated Actress was killed by Tapping whilst pregnant. This Operation is most commonly performed with the Instrument called Trocar. This is to be flattened & have a Lancet point; but this, as well as the round one makes a wound somewhat lacerated: Therefore, I commonly make a puncture

with a Lancet & introduce a Femal Catheter thro-
ugh it, for the water to escape. It is attended with
much less pain when performed in this way than
with the Trocar. The end of the Catheter being
round you run no risk of injuring any of the
Viscera. I have had a double Canula invented
for this purpose. We are directed to perform the
Operation in a line between the Umbilicus and
the Anterior superior spinous process of the Os
Ilium. As the Liver is frequently enlarged
in this disease; to avoid injuring this, the Opera-
tion is generally performed on the left side.
But it happened once to Mr. Clive of London,
in performing this Operation, to wound the
Epigastric Artery & the Patient died in
consequence of Hemorrhage. Hence Mr. Clive
directs the Puncture to be made in the Linea
alb. about $\frac{2}{3}$ of the way from the Pubis to
the Umbilicus. I have performed this Oper-
ation & find the wound to heal very easy.
Before making the Perforation, the Patient
is to evacuate the contents of his Bladder so
that there may be no danger of its being wound-
ed. He is to be laid on the edge of a Bed,
on his side, whilst a broad Bandage and
Compress are to be prepared. While the water
is flowing, several assistants are to make pres-
sure with their hands on the Abdomen, to
prevent faintness. A little Wine or some other
cordial is to be given to the Patient. After the
water is drawn off, a Bit of Ad. Plaster is
to be applied to the Puncture, & a compress
Dressed Bandage applied -

Lecture 26th Of Cancer

A Cancer may be defined a hard, circumscribed
Tumor, without redness, and attended with very little
sensibility. When such a Tumor ulcerates, it is called
a Cancer. Sometimes Inflammation terminates by
producing a hard state of the parts, but the Boil starts

in Women are most subject to them. In every case where there is a hard Tumor seated on one of the Mamme or elsewhere, it will often yield to evacuating remedies, Leeches &c to the part. But the safest practice in all such cases, is to extirpate it. When a Schirrhous Tumor is about to terminate in Cancer it becomes painful & tumid. The being on it become varicose, exhibiting an appearance which has a supposed resemblance to the Claw of a Crab - Hence the Name. The Sympathetic Glands in the neighbourhood of the Schirrhous become hard & the vessels passing from the Tumor become hard & indurated. Sometimes an obscure fluctuation is perceived from the Scydatis. At length the Tumor opens, & then constitutes what is called an open Cancer. This is a short account of Cancer produced by Schirrhous: But sometimes there are other places of a Cancerous nature & produce the same fatal consequences. When a Schirrhous Tumor is known to exist, it is by all means to be extirpated. We are not always to predict when a Tumor will terminate in Cancer; for the sometimes remain indolent for 30 years, then become active & terminate in Cancer. Mr. Hume, with great candour, says he could not very often distinguish between a Cancerous & Scrophulous Tumor, & says he has often left Tumors to themselves, supposing them to be Scrophulous that would frequently generate into Cancer, on the other hand he often extirpated them as cancerous which upon examination, turned out to be Scrophulous. It seems hard to subject a person to a painful and perhaps, a dangerous operation, when not necessary; but how much more inhuman is it, to leave a Tumor which may in the end kill the Patient, or to ulcerate & thereby render the Operation useless; so that when we are not able to remove a Tumor by dissection Remedies, it will in every case, be safe to remove it by extirpation. Authors are of different Opinions as to Cancer, whether they are, or are not Contagious - If Cancer could be ~~removed by~~ ~~contagion~~ communicated by Contagion, what Surgeon would have the

boldness to drop a cancerous sore? or even attend
cancerous Patients? Yet we know they do and
without taking the Disease, so that the Doctrine
of the Contagious nature of Cancer, cannot be
admitted. Some suppose them to be Hereditary.
This cannot be; for of 50 persons who receive in-
juries on glandular parts, not more than one
or two shall have Cancer. Yet it seems, that some
persons have a predisposition to the Disease; for
they will have a Cancer to follow the slightest
injury on glandular parts. Mr. Hume relates
a case of a Sailor whose Penis became Cancerous
from being compressed between the Planks on board
a Vessel. Cancer occurs in every age, but most
frequently in advanced life. Young women
are said to be more subject to Cancerous
Mamma, than married. They occur in the
Breasts of women, about the cessation of the
Menses; or at an earlier period, when they
are irregular. They appear in every part of
the Body, But the glandular parts are most
subject to them, but in women the Mamma.
There is a Disease affecting the Mamma, consist-
ing of Tumors which become very large &
heavy, Vinous mode the Patient principally
by their weight. Antiphlogistic reme-
dies will generally cure it, if not, they should
be removed by extirpation. 2nd Authors des-
cribe a Chronic Inflammation affecting the
Mamma. Here there is a severe shooting pain,
with little Tumefaction, or Discolouration of the
Skin. This is most common in young women. An-
ti-phlogistic remedies generally cure it. 3^d The
Mamma are subject to Erysipela. If instead
of one there are several small Tumors situated
there, we may readily suppose they are Epiph-
yloas. But in many cases, as Mr. Hume has
candidly observed, it is impossible to distinguish
these different affections, & in all doubtful cases
the safest practice is, to extirpate the Tumor,
& the earlier the better. He lays it down as a
general rule, that when the Glands of the Arilla
are affected, the Operation of Extirpation
cannot be performed with any degree of
success. But these Glands are sometimes affected
Symptomatically & are not contaminated by
the Cancerous Mamma. This is easily disting-
uished; for when they are Symptomatically affected

with cancer, the swelling goes on gradually. Although
Mr. Home says the Mammae are not to be extir-
pated when the Axilla glands are affected. I
have in several cases, where only the superficial
Glands in the Axilla were affected, extirpated
the Mamma & Glands also, with complete success.
There are two methods of extirpating a Cancer.
1st By Caustic & 2^d By the knife. The knife
has many advantages over the Caustic.
Where we use the knife, we have it in our pow-
er to examine the state of the Tumor, After it
is removed; and which is in many cases an
object. But when there is great dread of the
knife, we are obliged to use the Caustic.
Mr. Home recommends equal parts of Arsenic
& Sulphur, for this purpose. When the knife is
to be used, the following circumstances are
encouraging: 1st When there is no large Blood-
vessel in the neighbourhood of the Cancer.
2nd Where the Cancer has arisen from some
accidental Cause; for here we suppose no
general affection of the system. 3^d When the
Patient is in good health. Before proceeding
to the Operation the Patient is to be placed
in a good light. When the skin is not affected,
one Incision made in the Top of the Tumor
in the direction of the Fibres of the Pectoral
Muscle (if on the Mamma) is sufficient, and
the Tumor dissected out. When the Glands in
the Axilla are affected, the incision should be
continued into them. The Mamma being dissected
first, by its weight the Glands in the Axilla
will be drawn out, and before dissecting them
a Ligature is to be put on the vessels leading
to them; Then they are to be divided. But
when the Skin on the Tumor is in the least af-
fected Two incisions are to be made, so as
to inclose the diseased skin between them, which
is to be removed. After a Cancerous Tumor
has ulcerated, the remedies that have been
most generally used, are most thought of viz-
The leaves of Hemlock, scraped Carrots,
fomenting Poultices, an aqueous solution
of Opium, Arsenic, Solanum, Coros, Ralli-
c. &c. external remedies, Arsenic & Opium have

been used more than any other medicines. They
can only be good by mitigating pain: For the
Disease, after it has ulcerated, is incurable
either by Medicines or by extirpation.
Cancers are sometimes seated on the Neck, &
when deep seated, it is very dangerous to ex-
tirpate them. Scrophulous Tumors are very
frequently seated on the Neck, & they may
be mistaken for Cancer. The Submaxillary
& sublingual Glands are also sometimes the
seat of Cancer. Whimshaw relates a Case of
a person, who had a large Cancer on his
Arm, near the Elbow. When this Tumor could not
be extirpated, I prescribe Caustic & the actual
Caustery must be used. The Tongue is some-
times affected with Cancer. In some cases
the Lips, & chiefly the under lip is subject to
Cancer! Here it sometimes begins in the form
of a small wart. It may sometimes be cured
by removing the wart, without disfiguring
the Patient so much as one would imagine.
The Ball of the Eye is sometimes affected
with it, & is very generally cured by extir-
pation only. The Rectum is often affected
with it. Here the Disease is incurable &
the sufferings of the Patient are to be pal-
liated by the use of Opium. The Testicle
is often the seat of Cancer & you have al-
ready seen the Mode of extirpating it,
when Cancerous. The Bladder is also
sometimes the seat of Cancer. The Penis
is often the seat of Cancer. Here the Disease
frequently begins with a small wart; this
in some cases will remain indolent for many
years: and at length becomes painful and
very large. It is very easy to distinguish
between this & a Venereal Wart. The Uterus
is often found to be Cancerous and some Authors
recommend the extirpation of it. But this
should never be attempted, as it certainly
is a very hazardous Operation. Chimeric Tumors
always terminate in Cancer. See Mr. Pott's work.
The Testicle is also sometimes affected with
Scrophula: This can ~~not~~ be distinguished
from Cancer by the Pain not being so
acute &c. & by the Inflammation being
higher—

End of Lecture 26th

Lecture 2nd

The necessary Dissections, in the extirpation of the Mamme. —

Before Extirpating a Cancerous Tumor it is of the greatest importance to ascertain the extent of the disease. Where the Glands in the Axilla are affected along with the Mamme. If only the superficial ones are affected they can be extirpated along with it. But if the deep seated glands are also diseased, no Operation should be attempted, for it would be impossible to remove all the diseased Glands from the Axilla, & unless this was done, the Operation would be useless. When the Skin over the Tumor is not affected, the Tumor may be removed by making a simple incision in the direction of the Fibres of the Pectoral Muscle, down to the Tumor & dissecting it out. Many vessels are divided, they must be secured by Ligatures. The sides of the wound are to be brought together & kept so by Ad. Plaister, & a Pomphrey & Bandage put over the whole. In order the more completely to keep them together, & to obliterate the Cavity made by the removal of the Gland, we make this latter application. But when the Skin over the Tumor is the least changed in its colour or texture, that part of it is to be removed. In cases where the Chirri, or Cancer is confined to a part of the Mamme only, it is best to remove the whole. In almost all cases it will be best to remove a portion of the skin, for if it is all left there, it will be more than is necessary to cover the wound. The Patient is to be seated on a chair, and the Arm of the affected side, supported by an Assistant. The Incision is to be commenced first above the hardened Glands in the Axilla, & continued down in the direction of the Fibres of the Pectoral Muscle. The lowermost incision must be made first, for if the upper one is first made, the Blood will run down from it & impede the making of the lower one. After making the two incisions

The Glands are to be dissected out, but not separated from the Muscular Ganglia: Then by pulling at the Muscles, the Glands may be drawn out, or down & a Ligature made tight around them, above the diseased Glands, & the connection, or connecting part above the diseased Gland be great, a Needle with a double Ligature is to be passed through the part to be tied, & a Ligature tied on each side of it. The diseased parts are then to be cut away, & the wound dressed as before described.

On Fractures

A Fracture is defined, a solution of Continuity in, or of several Bones; resulting from a force of distention, disproportioned to, & exceeding their natural distensibility: sometimes produced by external causes. Yet Muscular Motions, sometimes, the sole cause; for instance, in Fractures of the Patella. Pecanon &c. Besides we see persons in fits of Spasmodic, where all the Muscles are relaxed, fall from great heights without breaking their Bones. It has been thought, that a persons Bones are more brittle in Frosty, than in warm weather; but this Opinion is very absurd, & what led them to believe it, was, that more Bones are broken in the Winter than at any other time, but which is probably owing to the ground's being more slippery, & hard, than usual at this time of the Year. When a Limb is fractured it is apt to be shorter than it was before, admitting a Flexion and considerable Distortion. But this is not always the case: for Example, one of the Bones of the Leg may be fractured without altering the length, for the sound Bone prevents the Distortion. A Protrusion of the ends of the Bones, called Protrusion, may for the most part be felt, or heard; This though is not always the case, for two things tend to prevent it: First a coagulation of Blood & 2nd When the ends lap over

each other, the Patient suffers great pain on being moved, by the sharp ends of the Bones pressing against the soft parts; The Muscles from the irritation of the ends of the Bones, take a Convulsive action. Fractures are divided into Simple and Compound, & Simple Compound. A Simple fracture is a solution in the Bones without any wound communicating externally. A Compound fracture is accompanied with an external, communicating with the Fractured Bone. Sometimes the wound heals by the first intention (when small) and then it is called a simple Compound fracture. In simple fractures the ends of the Bone must be placed in Apposition & kept so by splints & Bandages, & the Inflammation kept under by the Antiphlogistic remedies. In general the pain & twitching cease with the Reduction of the Fracture. The only difficulty in bringing the Bones to their right position, depends on the spasmodic contraction of the muscles, this however may be overcome by placing the limb in a relaxed position & Bleeding. To keep the limb in a proper position, Bandages & Splints must be applied. I prefer (as splints) those made of Pasteboard; because they are rendered pliable by wetting them in warm water, & will readily adapt themselves to the shape of the limb, which shape they retain, when dry: They should always be longer than the limb. Sometimes several days have elapsed before the Rigor is applied to: viz that case, the Inflammation must run high, with great swelling of the part. In the first place, moderate the Inflammation by the Antiphlogistic remedies, & apply a Bread & Milk poultice, sprinkled with the water of Acetate Perure; but do not attempt to reduce it before the Inflammatory symptoms subside. The first dressing of a Fracture may remain 8 or 10 days, it should then be examined and if the Bones be displaced, replace them. It is a Practice with some surgeons, to Bleed and Purge before the Inflammatory symptoms appear, in order to prevent them: But I think it best to defer it until Inflammatory symptoms come on. But Low Diet, & Bleeding is better than Purging. The Union will not be so firm at the end of this time, as to prevent a second replacing a Bone; but in the mean time guard against

Inflammation. If the limb be swelled, remove, or loosen the Bandages. I prefer Bleeding to Lancing in Fractures as Blood may be drawn at any time, & in any quantity without hazarding a derangement of the Limb, by getting up. The speedy union of the Bones depends upon the Constitution, and age of the Patient, & the situation of the Fracture. They unite much sooner in young than old People. A longer time must be allowed in a fracture of the Joint, than any other part. There have been cases where the ends of Bone lapped over each other and did not unite, forming an artificial Joint: & it has been advised in such cases to cut down to the Bone, & saw off the two ends that pass by each other, so that the ends may be brought into contact. I have however seen this Operation fail: & it has therefore been ingeniously advised, to pass a Pelion, between the ends of the Bones & thereby excite inflammation: Coagulating Lymph might be thrown out, which coagulating may become the bond of union. I have myself performed this Operation with success in several instances. In two instances, where the Leg, was fractured & union did not take place, I advised excision & union took place immediately. The parts were stimulated to granulations, which afterwards formed into Bone. First Simple Fractures are united by the first intention or Adhesive Inflammation. The same Muscle & Blood serving as a connecting Medicine: but, in Compound Fractures, the Blood escapes through the external wound, & coagulating Lymph is thrown out, which becomes vascular & at length becomes Bone. If the Bone be greatly injured, a part, becomes Carious & exfoliates. In this Case, a part of the dead, or sound part, when they are in contact is absorbed, which detaches the whole of the Dead portion. It should be removed as soon as it is separated from the Living. Sometimes the greatest part of a Bone is destroyed and is removed by the surrounding soft parts, throwing out granulations. In reducing a Fracture, the surrounding Muscles should be put into the most relaxed position. To take off the rigidity, a copious Bleeding only is (generally) necessary. Injections of Tobacco smoke, Antirheumatic &c. have been recommended. If a Bone be splintered & a sharp portion should protrude, size so as to imitate the Muscles, you should avoid making pressure

upon such a portion, for fear of producing Ulceration,
& thereby change a simple Fracture into a Compound.
Compound Fractures. These are sometimes attended
with profuse Hemorrhage. In this case the Tourniquet
must be applied until the Blood coagulates and
Plugs up the Bleeding vessels. If practicable, the
Bleeding vessel should be taken up. When the
discharge is stopped the first thing to be considered
is, whether the Limb can be saved without Ampu-
tation. If it be so much Lacerated, or Bruised,
that the Circulation to the extremity is impeded,
the Operation should be performed immediately,
or it may be deferred 2, or 3 days until suppurat-
ion comes on. Prefer the former. If the Limb is
to be saved, & Hemorrhage, still continues, from
the division of an Artery, passing out of a Bone,
it is best to introduce a plug, made of any soft
wood (as cedar) Sanipex &c) between the Bone
exterior to the vessel, that its sides may be pressed
together. If the Hemorrhage cannot be stopped
in any other way & the Fracture is in the Leg,
the Femoral Artery is to be taken up; as in per-
forming the Operation for Aneurism of that Artery.
An extensive Mortification warrants the Oper-
ation; but this is never to be performed until the
Mortification ceases, as it always seizes on the
remaining stump; if it be performed before the
Mortified parts separate from the sound.
Amputation is necessary in extensive injuries
of the Spirits. When the Hemorrhage is sub-
dued, the Fracture must be reduced as before
directed; but this is not always an easy matter;
for sometimes a part of the Bone projects out of
the external wound. If it be small you may
take it out with Nippers, or a pair of Forceps. If
any extraneous Body is in the wound, it should
be extracted. Having removed the Bone, if
the wound be small, it may be healed by the
first intention, which brings the Fracture to a
simple state. Bones can, generally, bear very
little Inflammation, without Mortifying in.
If the wound does not unite, by the first
intention, apply a Bread & Milk poultice.
If Mortification supervenes, it must be
treated with a generous diet. Cordials,
Wine, Bark, Opium, Porter, &c. Necessaries

proceed to the manner in which particular Fractures
of different Bones are to be reduced & dressed.

Fractures of the Nose

A stroke directly in front seldom produces this
Fracture, but generally such as have a lateral
direction. Treatment. If the Bone be not
much displaced, all that is necessary is to apply
strips of Ad. Plaster over the Part; but if the
Bones are pressed in, they may be replaced, by
introducing a firm Director, or a female Sound
answers very well, into the cavity of the nose, &
gradually raising the depressed portions, & dress
as above directed. If the Bones remain firm
in their place, nothing more is necessary: but
should they not, introduce Plugs of lint, or some
other substance, that will retain them in their
proper situation. Inflammation is to be kept
down by Bleeding, Purging, Low Diet, &c.

Fracture of the Lower Jaw.

This Fracture is generally made at right angles
with the Jaw, & most frequently Anteriorly as
the *Empyris*, sometimes laterally; and
Fractures of the Condylar Process, have
been known. This was attended with dislocation;
but is very seldom fractured. The Bone is so thinly
covered at its lower part, that a vacancy may be
felt there; to which may be added a swelling
of the Fracture side. The Patient will be inca-
ble to move his lower jaw, & upon looking into his
mouth, the Teeth will be uneven & not projecting in
the usual way. The Treatment consists in ap-
plying a Bandage, so that the under jaw may be
pressed firmly against the upper, which acts
as a splint. It is very often the case that the
Teeth are loosened, but must particularly cau-
tion you against removing them, & more par-
ticularly, if they be in the course of the Frac-
ture, as it will aggravate the injury by making
a Compound, or a Simple Fracture. They
should be carefully replaced in their natural
situation, and confined to the adjacent, or Con-
tiguous teeth, by a bit of silk thread. Adressing the
Fracture a 4 headed Roller has been used,
but a common one answers every purpose.
The fractured ends being placed in their right
situation & retained so by an assistant, apply

a strip of Ad. Plaster under the Chin to prevent exoriation. A roller is then to be applied under the Chin, passing round over the top of the head, then round the Fore head & Occiput. Then round the Fore part of the Chin & back of the neck. The Bandages may be pinned at their intersection, to prevent their slipping. In passing them it is best to go several times, in the above direction; that the dressing may remain more secure. The Patient should be fed with Liquid Aliment & not permitted to speak. In 3, or 4 weeks a cure is generally expected.

Of the Spine. The Cause producing a Fracture of this part, is generally so great as to cause distortion, which is always fatal. It has been recommended to distend the Spine, by passing a Roller round the Occiput & Chin & making extension by the feet. I have tried this Method, & was pleased with it at first, but it would not finally succeed. When the Spine is distorted, Blood accumulates & the spinal Marrow is compressed. In fractures, or Dislocations of the Spine, all the Bodies, supplied with nerves, from below the injury, immediately become insensible, & if it be above where the Thoracic Nerves go off, it is immediately fatal; as we know life depends on the motion of the Diaphragm, which ceases as soon as the nerves, that supply it, are cut off; & which are the Thoracic. The Patient, however sometimes lives for a few days, & dies from the constant pressure on the soft parts; producing mortification to this succeeds Ipecac, which carries the Patient off. Patients, in these cases, are generally unable to evacuate their Stool, & urine. This you must remedy if possible, the last may be effected by introducing a Catheter &c. If there be any communication externally apply a Compress wet with Brandy. In order to examine a fracture of the Spine, you will naturally wish to turn the Patient on his Pelvis; but this should not be done, as Respiration would be impeded by the Bowels pressing, or compressing the Diaphragm,* which would prevent its reaction. Of the Sternum: This seldom happens, but when

* No contractions are prevented.

it does, it is generally in a Transverse direction. In this Case a Bandage should be applied round the Wound, & if Inflammation should occur treat it as a genuine Pneumonia, by Bleeding, Purgings &c.

Of the Pelvis: Such a Fracture seldom occurs, tho I have seen parts of the Os. Pubis broken off. This may sometimes be distinguished by severe pain in the parts & by taking hold of the Anterior and superior spinous processes & moving the Bones. The Crepitus may sometimes be heard.

The Os. Pubis, & in these cases a Bandage is to be applied around the Pubis, & in the last case the Patient should be requested to keep his thighs as near together as possible: This will be readily done as their separation causes great pain.

Of the Clavicle: This Bone is frequently fractured about the middle, & Acromion & Capula, generally oblique, sloping from the shoulder downward & inward. If the Bone be broken under the Ligament on the Shoulder, it is very difficult to be ascertained; but at any other point, is very easy; For the weight of the Arm draws down the Capula, part of the Bone, & the Action of the Pectoralis major Muscle, causes it to pop by the Sternal portion, which may be felt. Besides, by raising the Shoulder the ends may be brought sufficiently near. If the Patient is carried towards a Table, he continually inclines to the affected side. He is likewise unable to rotate his arm and unable to put his hand to his forehead. After the Fracture has been discovered, it has generally been the custom to seat the Patient and let an assistant stand & place his knee against his back. Then pull back the shoulder; this brings the ends of the Bone into apposition. The only difficulty lies in keeping them so. A strip of Bd. Plaster being applied over the Fracture & some tow in the Arm to prevent excoriation. The common application is a Bandage passed around the Shoulder & under the Arm, so as to form with the Bandage the figure 8; but this is very uneasy to the Patient. I recommend the method of DePault, who applies a wedgelike compress or Pad made of Horse Hair, in the Axilla, and secured in that position by a Bandage passing around the Chest & over the Pad, one end passing over the Shoulder & fastened to the Bandage behind which cages the shoulder. A Bandage is afterwards passed round the Arm & Body so as to bring them in contact, with a view of suspending it more effectually than the Loop could do. Another

Bandage is applied in this manner, One end is placed in the opposite Arm Pit or Axilla, & passes anteriorly to the other shoulder; then carried down the Back to the Arm pit (or beginning of the Roller). I am very partial to this mode. It is necessary to examine the ends frequently, to see if the Ends are exactly apposed to each other, for a Lump, or Tumor on that part is a very serious deformity, especially to Females. In 3 or 4 weeks, it is generally well. It renders the Dressings much more secure, to Pin the Roller at every inter-section.

Of the Acromion Process

The weight of the Arm pulls down this portion and leaves a vacancy easily felt or seen. In order to approximate the Fractured ends, push the Arm directly up, & pass a Bandage around the Arm and Shoulder, Union will take place in 5, or 6 weeks.


Of the Scapula: This Bone is seldom Fractured, owing to its being surrounded by numerous muscles and readily yields to any force applied to it. It is however sometimes Fractured at the Acromion or Coracoid Processes and Angle. When the Acromion process is broken, as it is thickly covered with muscles, a separation of the Bones may be felt; & on rubbing the Parts, a Crepitus is heard. In One case I saw the Patient lean to that side, & could not use his arm. The Dressings are the same as for a Fracture of the Clavicle; They may be removed in 25, 30, or 40 days. When the Angle is broken, the Patient complains of great pain on moving his arm: if the Surgeon feels carefully, along the Basis of the Scapula, & moves the Patients Arm, a Crepitus is felt, or heard; also a rupture may be perceived; for the action of the Trapezius, & Pectoratus Major, acting tend. to separate the Fractured portions. The treatment consists in placing the Arm in such a position that the ends of the Bone may be brought into contact, that is placing the Arm in contact with the side. A Bandage should be passed around the Body & arm (by the side which will keep it in that position by the side). In

20, or 30 days Union will take place. The Coracoid process is scarcely ever fractured, because it is deeply seated. But when this happens the injury of the surrounding is so great that the Patient seldom recovers. Place the end of the Finger in the Axilla; then apply a Bandage, as in fracture of the Acromion &c.

Of the Humerus. This Bone is most commonly fractured at the middle, sometimes transversely but oftener obliquely, sometimes higher up than the middle. I have known it fractured of its Head. A groin it has been broken just above the Condyle & even separated from each other. A fracture at the middle is known by the Arm bending readily at that part, & the fractured ends jutting against the skin, so as to be perceptible to the Finger.

Treatment. In the first place the Clothes of the Patient are to be taken completely off. The Muscles must next be relaxed by bending the Elbow. The Elbow and Shoulder are grasped by two assistants. Extension & Counter Extension made: The Surgeon then applies a Bandage wet with Rhipis & Vinegar or Oil & Vinegar to the Arm from the Elbow to the Shoulder. In my late Practice, I have recommended the Bandage to be wrapped, from the Hand to the Axilla, in order to prevent an Oedema or swelling of the Parts below the Elbow. Three Splints are to be applied, (made of Pasteboard & secured by the same Bandage,) one behind, one laterally, & the 3^d before; made the length of the Arm. Some Surgeons recommend a Stick to support the Arm; but I prefer a wide Bandage, passed around the Arm & Body & always apply a small piece of Flannel or Linnen between the Hand and Body. When this is neglected the Patient invariably complains of uneasy sensations & becomes restless. In 10 days the arm may be examined, but the dressings may be continued &c.

Head of the Os Humeri: This is attended with great contusion of the soft parts, which renders the existence of the Fracture difficult to be ascertained. The Patient cannot move his Arm, & when moved, complains of great pain. The Crapitus here is not so

Quadrant as in most Fractures; because the Head
being loose moves with the Bone. I have always
discovered its existence by ordering the Patient to
suffer extension to be made, then grasping the
Arm & forcibly moving it Backwards & Forwards.
The Bone however commonly projects in towards
the Thorax. The Fracture then cannot be easily
felt. In treating a fracture of this part it should
first be reduced: which is done very easily. A Pad
of a conical form is to be applied on the Axilla and
secured by a Roller passing around the Body.
This serves as one splint. Three others are to be
applied: one before, another laterally & a third
behind, fastened on with Tapes, then a Bandage
over the whole to keep the arms in contact with
the side of the Body. It has been supposed
difficult to distinguish a Fract of this from a
Luxation; but in Cases of Fracture, the
~~the~~ Cavity before the Shoulder is farther from
the Acromion Process, Peridez instead of finding
around Head, we have the roughly fractured
one in the Axilla. When the lower part of the Bone
is fractured, such a small portion remains, that
the common splints have no effect. The Arm must
be held & a Bandage, from the fore arm, applied
up, and the splints of Pasteboard of the following
shape , being moistened with water, must be
applied one on each side of the Arm, and two other
bent to the shape of the Arm, should be applied
behind & before, the whole secured by a Bandage.
In 3 weeks the Patient generally will recover.
The Condyles of the Humerus, are sometimes
broken. In this case, to prevent the Fore arm from
being raised higher than the Humerus, and
producing deformity. Two splints are to be app-
-lied, one along the internal side of the Arm, over
the internal condyle, and the other, outside over
the external condyle. They must thus be secured
by a Bandage. Of the Fore Arm. Some-
times both of the Bones are broken at the same
time, & at the same place; at other times only one,
which is apt to be the Radius. If both are
broken the Arm bends readily at that part, a
Crepitus is sensibly perceived. If the Radius only
is broken it is apt to be near the wrist, and may
be known from a Crepitus resulting from the
Rotation of the Ulna. To make an extension of
the Limb, an Assistant takes hold of the Patient's
Arm below the Elbow, while another grasps his

his hand (as in the manner of shaking hands). By drawing different ways the ends of the Bones are brought into contact. A Bandage must now be applied from the wrist to the Elbow; taking care not to draw it too tight, as the Bones would be pressed together. I have omitted one observation, which is, to be cautious that you have the little finger, towards the Body & the Palm of the hand, directly forward, a couple of firm splints, one on the inside & one on the outside, next the Bandage. If the Splints be of Pastebord, they must not be soaked in water, those made of thin Pindles, are preferable in this case. Let the Arm be supported in a sling. In Deeping Fractures of the Fore arm, some Surgeons advise to keep the Thumb uppermost and preventing the Bones passing each other; but when one Bone is fractured a similar treatment is necessary.

Of the Olecranon. This Bone is most frequently Broken at its Base, and is transverse. It is sometimes produced by the action of the Diceps muscle in the act of throwing ~~only~~ weight out of the Hand; and sometimes from falling on that part; as in falling down stairs backwards, when the Arm is suddenly thrown back to raise the Body. In this case the injury extends to the joint, the Patient feels an inability to extend the arm, continually keeping it half bent: owing to the contractions of the Diceps & Brachialis muscles, the fragments of Bone it communicates no motion to the Ulna: also a Crepitus may be heard. Extend the Arm & apply a Bandage, from just above the wrist, to near the Shoulder. In wrapping the Elbow joint, take care that the skin is not wrinkled, as it is apt to be pressed between the joint. After the Roller is applied, it is necessary to keep up extension, & for this purpose apply a splint from the Axilla to the Wrist on the anterior part of the arm: at the upper & lower ends of the splints a little tow should be applied under them, to prevent excoriation. After 5, or 6 days the Arm should be examined & moderately flexed & extended, & repeated every 2, or 3 days for a Month, to prevent a stiff joint. In 6 weeks it will be perfectly well. The C270-
CORN process of the Ulna is sometimes broken. In one, I saw a case, & at first supposed it to

be a Luxation. But on examining, I heard a Crepitus. The Arm was moderately flexed and kept so for some weeks, & then united without farther difficulty. Of the Metacarpal Bones. These Bones are sometimes fractured and much contused. The Treatment must be merely to bind on a flat Piece of Pasteboard or Rind. When the Fingers are fractured be careful not to mistake for a Luxation. If one of the Fingers are broken apply a Splint of Pasteboard as before, because the Motion of the sound ones, would prevent the others uniting. Fractures of the Ribs — There are mostly broken near the middle, but sometimes Elsewhere, sometimes, 2, 3 or 4 at a time. It is for the most part attended with a difficulty of Breathing and a pain, in making a long and deep inspiration. Cough, in some cases, when the fractured ends of the Ribs are pushed in against the Lungs, or spitting of blood comes on. If the Surgeon will place his hand on the Patients breast & request him to cough, he will be sensible of a Crepitation, to which Prognosis may be added, and Emphysema in some cases, all that is requisite is to apply a Bandage, several times around the Chest & Throat, which may remain until a cure is effected. This Bandage is to prevent the action of the Ribs in respiration. If there is no Fever, Demulcents given internally have the best effects. I have found the happiest effects resulting from the use of the following Medicine. Vizt. A solution of Gum Arabic with a little Vin. Antimoniale & Tinct. Therb. If the Emphysema be small it is of no consequence, but it is sometimes so large as to extend over the whole Body. In this case an incision must be made through the Integuments & Muscles into the Cavity of the Thorax, to give vent to the Air. If Inflammation comes on the Treatment will be the same as in Pneumonia. The Bandage may be secured in its place, by passing strips of Muslin over the Shoulders and joining them to the Bandage. The Cough is sometimes very troublesome and Distressing.

Of The Os Femoris. This Bone is most frequently fractured obliquely, but often Transversely, from the middle upwards & outwards, in its Body, just below the middle; sometimes just below its condyles at its neck & near the Trochanters. Signs. — It is shorter than the other owing to its muscles contracting; for in Purgative affections no shortness is observable and motion gives great pain; more or less crooked at the fractured part, where it is also thicker, owing to the fractured ends, pushing each other too far. Treatment. If the Bones are not displaced a Bandage & the usual Splints are all that is necessary; but when the Bones pass each other, then the contraction of the muscles is the most difficult thing the Surgeon has to encounter. To obviate this inconvenience Dr. Pott has advised the leg to be bent on the thigh, and the thigh on the Body, or Pubis, extension is then to be made & the Dressings applied. But the Patient finds it difficult to keep his limbs in this position, as he must be continually on his side. Besides, the Surgeon is deprived of the advantage derived from compressing the two limbs together. I prefer raising the Patient in a horizontal position, with the Leg extended. Here you see he is supported on a great many points; which renders every exertion of muscular motion unnecessary, of course he is not so soon wearied of his position. To counteract the muscular powers of the thigh, I have seen other means used than those of Dr. Pott. Extension being made, the Head was fastened to one end of the Bedstead & the feet to the other end. But this is a painful mode. A Bandage has been applied so tight around as to prevent the Bones from pushing each other, the affected limb firmly tied to the sound one & a compress of Malmes placed between them. In this case the Patient cannot evacuate his Feces & Urine. In moving the Patient from one Bed to another, the Surgeon should have hold of the Patients limb, & that of the affected one. While moving him, a particular degree of extension should be kept up. A weight has been tied to the foot of the affected limb, and suspended over the edge of a Table, or Bed. But this will not answer, for though it may draw down the lower portion of the Bone, yet it does not prevent the descent of the upper. DePault has proposed a method which is very difficult. By this the Thigh is constantly extended & the fractured ends kept in apposition.

7 Having the Hip joint fixed, it is necessary to have the following articles, in readiness. A narrow mattress laid on Boards, (to prevent the Buttocks from sinking) instead of a Sacking Bottom, a Roller, with a many tailed Bandage, with a long and short Splint as well as common Splints, two Bags filled with Chaff or Chaff, long enough to extend from the Trochanter to the Ankle. Folds of Flannel will answer when the Bags of Chaff cannot be readily got, tho' they are much more preferable, for by shaking the Chaff up or down, you may adapt it to the form of the Leg, Tape, Ad. Plaster, and a Handkerchief. Then the Patient should be laid on his Back on the Mattress, his head supported by a Pillow, and extension made until the two limbs are of a length; observing at the same time, that the Pelvis is straight, as the Bone is thickly covered with muscles, it is a difficult point to ascertain whether the ends of the Bones are in complete contact, or apposition. But it is necessary to do this, for if the muscles be contracted so much that the ends of the Bones cannot be apposed to each other at the same time. The first Dressing. Extension being gradually made & kept up & the muscles gradually relaxed, the apposition will be effected. Afterwards an assistant raises the Thigh gradually by taking hold of the knee, whilst the Surgeon applies a Bandage from the knee to the Hip. This is only to prevent the action of the muscles, without tending to keep the ends of the Bone, in their proper situation; for it is a fact well known, that Pressure diminishes the power of contraction in muscles giving them a transient Paralysis. Care is to be taken in the application of this Bandage, not to draw it too tight; because, the muscles will be pressed in towards the Bone, which, (especially the Adductors will have the same effect as by contracting) the long splint is applied from the Axilla to below the Foot, having its broadest part in the Axilla: The shortest one from the Perineum, also below the Foot. Between these splints and the limb, the Chaff Bags or Flannels are placed. The small, or common splints are placed on the anterior & posterior parts of the Thigh, over the fractured part of the Bone, a compress, or Towel, or Cushion stuffed with Hair, is to be placed in the Axilla; Plasterboard will answer for the small splints. Extension being kept up all the time. The

whole of the Splints, are then secured by Tapes, passing
around the Leg & Thigh & a Bandage passing
around the Chest & Long Splint; which is prevented
from slipping up by a small one, first pinned to the
Anterior part of the Abdominal Bandage, then
carried down between the Legs & up the Back
to the posterior part. To prevent excoriation from
the arm pits, Tow may be placed between the
small Bandage and the Skin. A large Ad.
Plaster may be applied over the tuberosities
of the Os Innominata to prevent excoriation
from lying in Bed. Another Bandage must be
applied over the Heel, & Foot letting one end hang
at liberty: This may be passed over the notch of the
Perpendicular Blockth, at the lower end of the
long splint and being forcibly pulled, making an
extension of the Limb, is then to be tied to the Splint.
When dressed in this manner the Pelvis, Thigh, & Leg
are in a straight line, when he is in Bed. If he is
not to remain in it, it may be proper to place the
Dressings in such a manner, as will be most con-
venient for their application. The Tapes may
first be laid down, as they are to be tied over the
Dressings: Then the strips of Bandage (which
is preferable to the Roller) may be placed on
the splints that is to occupy the Back part of the
Thigh. A Handkerchief should be placed in
an oblique manner, so to be most convenient
for tying the upper part of the Splint, the Patient
is then to be placed on these. The object of this
preparation is, to have the dressings in such a
situation, that they may be applied without
moving the Patient. The Splint sure is somewhat
different from Dehaute's, it is longer & has the
perpendicular Block at the bottom part. Dehaute's
splint being short, that the holes in the upper
part, through which the Ligature, or Bandage
that makes the Counter extension has to pass,
of course the Bandage must have a lateral
action and to pull the upper portion of Bone
out from the Pelvis: It also produces pressure
on the Muscles. Now this is greatly remedied,
by having the hole near the Pelvis; for resistance
is in more of a straight line with the Thigh:
besides part of it is kept up by the arm pit.
The lower perpendicular piece tends to the
same thing, viz - preventing lateral pressure, or
Extension. If the limb should swell loose, the
Dressings, but do not remove them. Bleed freely &c.

Examine every day, or two to see if extension is kept up. The following is my method of treating a Fracture of the Os Femoris. On a Matras or Sack & Bottom, place a Pillow for the head of the Patient; then lay 3, or 4 pieces of Tape for the thigh on this, a Broad Cloth, to wrap the Splints up in (the long ones). On this a number of Rollers or Bandages of Ships. A Handkerchief is then brought around the Thigh & passed between the Scrotum & Thigh, and on the Puberality of the Os Ichiuni, on the affected side. By this the Assistants make counter extension; while by another Handkerchief, passed around the Anus & passed on the Foot, extension is made. When the Bones are completely brought into contact, the Surgeon begins at the Knee to apply a Bandage of Strips, not very tight; for they cannot by their means keep together the fragments, owing to the thickness of the Muscles. They only serve to keep the Muscles in their place, acting as an artificial Aponeurosis; then Roll the Long & outer Splint in the Broad Cloth, also the short one. Then placing Wads of Chaff on each side of the Leg to fill up the Interstices. Then after making Counter Extension with the Handkerchiefs, tie the Tapes around the Fore Splints & a Bandage around the Pelvis, to secure the Splints near the Body. Sometimes the Neck of this bone is fractured. The Symptoms are $5\frac{1}{2}$ its being shortened, (tho, it may be restored by extension). 2nd The Patient cannot move the Hip joint, & the Toes, turn out. If extension is made, a grating is heard, of the Bones. The Bones, in Rotating, turn upon its own axis. When moved the Patient feels great pain. A Fracture may be known from a Luxation, because in the latter case the Toes, are turned inwards, and the Thigh cannot in the least be rotated. The Treatment consists in applying the same splints, as were before recommended. The Extension, generally easily effected. In 8, or 10 weeks it is generally well; tho, sometimes much longer, & particularly, if the Muscles, or the Sciatic Nerve, be much injured. In Fractures of the Condyles, which usually shoot upwards and backwards, the same Treatment is to be employed. When they are separated, a Circular Bandage (with a Circumference of Linen, on each side) should be applied

around the knee & kept in contact, by two lateral Splints. A Roller should be placed under the knee to prevent the lower portion of Bone from getting out of its place, as the fracture often communicates with the joints. It is particularly requisite to guard against inflammation. They generally unite in 5, & 6 weeks.

Of the Legs.

Both these Bones are generally fractured at the same time, but either may be broken separately. The fracture generally takes place a little below the middle, as the Tibia lies very superficially at that part. A space between the fractured ends may be felt; & if both Bones are broken a Crepitus is heard by moving the Foot. In Transverse fractures of the Bones of the Leg, the ends are either in contact or may be readily brought so. The Treatment, consists in placing the Leg of the Patient in a Fracture Bath, taking care not to tie the Bandage too tight: keeping up Extension air & Counter Extensions. A Splint is to be bound with Tapes, on each side of the Leg, having placed Strips of Flannel between the Splints & Leg. In 2, or 3 days remove the Dressings & examine it. This may be done without disturbing the limb, on account of the peculiarity of the Dressings. It not infrequently happens that the Bones are broken obliquely. Here the muscles by contracting shorten the limb, and two splints which entirely obviate this inconvenience, and are applied as follows. The foot being rested on a Pillow, a couple of Tapes are applied longitudinally with the Leg, one on each side. They are secured in this position by a circular Bandage, or girt 3, or 4 times around just below the knee, at the insertion of the Sartorius & Peroneus Muscles. A bandkerchief is then passed round the foot, after the manner of De Pault's. The man-tailed Bandage is then fixed on, having previously made Extension & Counter Extension. A piece of Flannel is then applied on each side of the Leg. The Splints then applied over them applied over them should be long enough to reach from 3 inches above the knee to 3 inches below the Foot. Above they are perforated with 4 holes and one below. Through which pass a Boy of 14 connects them together. Observe, that when the Splint is applied, the lower hole must be at least 6 inches below the sole of the Foot. The Tapes confining it above the Handkerchief

that was tied to the Foot, is forcibly drawn and tied over the Crook Bar, by this means a constant and complete extension is made, that is, that the knee Bandage may prevent a return of Blood by the Veins. But this is not the case: and the purpose is completely answered. But if there should be a violent action of the Muscles, I would propose a free use of the Lancet. At 8, or 10 days examine if the Bones retain their proper situation.

Of the Patella.

There are mostly Transverse but I have seen them Longitudinal and sometimes Oblique. The Symptoms of Transverse Fracture are as follows: The Patients cannot extend his Leg, but can walk backwards, by drawing the Foot after him. At the Leg is extended and the Thigh and Patella moved, a Crackling is very sensible; or if the Leg be flexed, the cavity between the Fractured extremities is very evident. In Longitudinal Fractures if the Leg be extended, a cavity will be felt, as the Patella is very thickly covered. See Common Fractures of this Bone, they are of little consequence, as a proper position of the Limb, is nearly all that is requisite. Only to relax the muscles, by extending the Thigh, and raising the Body on the Thigh & the Thigh on the Body, by means of Pileus; apply a Compress above the upper Fragment & pass a Bandage several times around the Leg, just below the knee, and several times around the Fractured part, and then to the Hip, over the Compress. Apply them in the following manner. Commence, by applying a Compress immediately above the Patella. Secure this by a Bandage that passes to the Hip, to prevent the action of the muscles, of that part: then bring the upper portion towards the lower. Another Bandage is now applied from the Ankle passing below the Foot to the knee. The intention of this is that the parts below the knee might receive the same support as the Thigh; & so prevent it from swelling. Push the lower Bone towards the upper. These Dressings are apt to throw the Skin in wrinkles, over the Fracture, & would be, also, apt to occasion swelling, as the parts are unsupported. To prevent Flexion of the leg, a long Splint may be applied, posteriorly, having a piece cut out, under the Heel. At the end of 20, or 30 days, the Leg may be flexed, and extended every way to prevent Stiffness. Sometimes the upper Fragment is pulled away from the lower.

See Plate 4th Fig 8th

In these cases the Patient loses for a while the use of his limb, but at length a strong Ligament is formed between the Fractured ends & the use of the limb, restored. Though the Muscles are shortened, yet they can extend the Leg after a short time, as well as before. They will adapt themselves to the duties they have to perform. A very convenient method of giving Flexion & Extension in the case is to let the Leg hang over a Table, which may be moved at pleasure.

On Luxations.

When one Bone of a Joint is displaced from its natural situation, it is said to be luxated. It loses its shape, & the Patient complains of a great deal of pain. If the Surgeon be called in time it may be easily reduced. The Chief difficulty arises from the contraction of the Muscles adjacent thereto. It was formerly supposed to be owing to the Capsular Ligament being wounded or Ruptured about the ends of the Bones. That this is not the case, is proved by the easy reduction of a Bone in Rotation of Muscular Motion. This difficulty can be removed for the most part by keeping up Extension and Counter extension. If this will not do, it has been proposed to keep up the Extension until the Muscles are wasted. This method proved very successful; But the most speedy is, by Bleeding and Deliquium. If the Patient refuses to submit to this Operation the nauseating effects of Qui Emetic, or Clysters of Tobacco smoke, will sometimes suspend their action. Large doses of Opium will have the same effect & some have recommended Antispasmodics. If a month has elapsed before you are called, these latter exhibitions will be useless, for in that time the Muscles will cease to act, and adhesions will be formed around the Bone, tending to retain in the new socket that it has formed for itself in the soft parts. The Capsular Ligament also will have that effect, by contracting around the ends of the Bone. Force sufficient to tear it loose from its adhesions, must be applied: at the same time care must be taken not to exert this force upon any other part, keeping the Limb as relaxed as possible.

Of the Lower Jaw

This Bone is frequently luxated forwards, by the Condyles passing too far over the Tubercles of the Os Temporum; it is induced by forcing it. To reduce it, the Thumbs of the Surgeon are first to be defended with a Towel, wrapped around them, & thrusting them into the Patient's mouth, pretty far. The fingers applied outside / & opposite the Angles of the Bone - May then be pushed downwards, the Chin being raised suddenly, it will come into its proper situation.

Of the Clavicle

It is sometimes luxated at its juncture, with the Scapula. In this case the weight of the Arm pulls the Scapula downwards, which renders the luxation evident. All that is necessary is to raise the Arm & apply the same Bandage, that was recommended for a Fractured Clavicle, till Union takes place in the lacerated Ligament. In 6, or 8 weeks it will well.

Of the Os Humeri

This Bone is frequently luxated at the Shoulder joint - the Head is most frequently lodged in the Axilla, sometimes under the Pectoralis Major Muscle: I have known a luxation to take place posteriorly. When the Head of the Bone is in the Arm Pit, the Patient is unable to move the Arm. A Vacuity is seen directly below the Acromion Process of the Scapula. In luxations, under the Pectoralis Muscle, or back wards, the Head of the Bone is easily distinguished. If the Surgeon is called soon after the Accident, he can easily replace it, by taking hold of the Arm, near the Elbow, & making Extension, whilst with the other to the Acromion Process, he makes Counter Extension, at other times, however much Force is required, a Towel is laid longitudinally to the Arm and secured by passing a Bandage around the Arm, just above the Elbow. Assistants take hold of these Towels & make Counter Extension. Others take hold of the Acromion forcibly, while the Surgeon flexes the Fore Arm, to relax the Muscles (Biceps &c) & likewise to make lateral Extension. A sufficient Extension cannot be made

by the Assistant, a Pulley may be fastened to the
Wall and to the Towel. If Fall there means Fall -
Bleed ad Deliquium, which causes it to be reduced
immediately. If Adhesions have taken place,
sufficient Force must be applied to tear them away.
For this purpose, the Patient must be seated upon
Stool. A Broad and Strong Bandage or Belt
passed around the Chest & carried to the opposite
side of the room, to be fastened to a Hook for
Counter Extension, & it is necessary, that it should
be made from the Populaj, otherwise part of
the Extension would be made on the Subscap-
ularis Muscle, and endanger a separation of
the Body. The weak attachment of the Arm
to the Scapula, is shewn in a Case recorded by
Cheseldon, of a Miller who had his arm torn
off, from his Body &c. A strong strip is also
to be wrapped on the Acromion, which is also
fastened, for making Counter Extension at
the Scapula. While the Extension is effected
by Pulleys fastened to the Towel, at the Elbow,
& a Hook in the Wall. While this is going on, the
Surgeon, flexes the Fore Arm, Rotates the
Humerus, & at the same time making lateral
Extension. By making great Extension in
this way, it may be reduced. There is one
great inconvenience attending a sitting
posture of the Patient, viz. he is unable to
keep still. The strap applied to the Acro-
mion is very apt to slip: To remedy this, I
would place the Patient on his Back, in every
case where great force is requisite -

Of the Elbow Joint

The Bones of the Fore Arm, when luxated
pop upwards & Backwards, rarely side-
ways & hardly ever Anteriorly. The Bones
are so thickly covered, that a Luxation can
very easily be felt. When it is so, it cannot
be moved by the Patient, & is half bent -
An Assistant takes hold of the Fore Arm,
& twists - Another takes hold of the Os Humeri.
While the Surgeon pulls backwards, to disen-
gage the Coracoid Process of the Ulna -
The Assistant at the Wrist is to let go sud-
denly, & the Bone falls into its natural Socket.

In Lateral Luxations the same treatment is necessary. A Luxation of the Head of the Radius sometimes takes place & is thrown upon the Ulna. It is then Bone, & cannot be disjuncted. The Surgeon reduces it by applying his Thumb to the Bone, & pushing it over the Side of the Ulna. The Bones of the wrist when displaced require the same treatment. The Bones of the Finger joints luxates: in this case extension must be made, until the Surgeon places them in their natural situation; and treated as Fractures of those parts. If however, considerable time has elapsed, before the Surgeon is sent for, he will find it difficult & sometimes impossible to reduce them.

Of the Os Femoris.

The Head of this Bone is much oftener Luxated, than Fractured, the Cavity of the Acetabulum being so deep, & the Hip joint being so deep & thickly covered with muscles, that one would suppose that a Luxation of that part hardly ever happened. But I myself have witnessed it frequently; and particularly upwards and outwards. In this case the Limb is shortened & immovable except moved with the Pelvis. The Foot is turned inwards & the Knee semi-extended. It is said, that this Luxation oftener takes place downwards & inwards in the Foramen Osale. This I have seen but once, when the Limb was shortened, the Foot turned out, and any attempt to turn it, gave pain. A Tumor is perceived in the Thyroideum Foramen. When the Luxation is upwards & backwards. The Patient lies on his side (the one uppermost) & supports his Thigh & Leg to be bent to relax the Muscles. Treatment. A couple of Towels are applied to the knee in the same manner as is applied to the Elbow in Luxations of the Shoulder & attached to a Pulley. By this, Extension is made, while the counter extension is made by passing a Strap between the Legs, over the Os Ischium, whilst extension is kept up. The Surgeon rotates the Thigh, & the Bone

passes readily into the Acetabulum. If the
Drain of the Cavity should prevent, let lateral
extension be made, by what will answer better.
The limb should slope in the direction of the
Extending power; this is affected by a proper
position of the Patient. When it is Luxated in
the Foramen Thyroideum, the same course must
be pursued, only, Extension must be made
at right Angles; For this purpose the Patient
must be tied down to the Table, and a Strong
Handkerchief passed around the Thigh, over
the Surgeon's shoulder, and tied. By this means
he makes lateral extension, and also must rotate
the Limb. The Bone may be known to be in its
place, by its becoming of the same length as
the other, also the Patient's ability to move it.
It may be known to the Surgeon by a Snap
or sudden motion that is felt, & often heard.
A Contusion of the Hip has sometimes occa-
sioned the Toes to turn out, & given rise to a
Mistake, for Luxation. The Patient will like-
wise experience pain, in every attempt to turn the
Toes inward; but by the Absence of several
of the above Symptoms, it may easily be disting-
uished from Luxation of that part.

Of the Patella..

These are very rare. In all cases, I have
seen the Tendon connecting it with the
Tibia, has been separated. The Luxation
will be laterally & for the most part, extern-
ally and for the most part externally; for the
internal Condyle of the Os Femoris is so
prominent, that the Patella slips over it. It
rests on the side of the extremity, having its
anterior surface projecting upwards. The
Patient cannot bend his leg, and the Bone
may be easily felt out of its situation. To
reduce it, the Limb must be extended. When
the Bone can readily be pushed on its natural sit-
uation. Keep the Patient quiet & guard against
Inflammation.

Of the Knee Joint.

These are also common. I saw a case
where both the Tibia, & Fibula were displaced
externally. The internal cavity of the Tibia,

receiving the External Condyle of the Os Femoris. The Bones are easily reduced, by a little extension. But it was, and is always difficult to keep them so. Extension was kept up by the Splint, & in Fractures of the Thigh. It was sometimes before the Patient got well, owing to the Laxation of the Capsular Ligament.

Of the Ankle Joint.

The Leg may be pushed externally, internally, anteriorly or Posteriorly. When the two former take place, both the Tibia, & Fibula are broken: The Luxation is then partial. I once saw a Case of Luxation anteriorly, where the Capsular Ligament was torn and the Tibia, thrust on the Foot. Considerable Echinymosis & Inflammation occurred. These were first to be reduced, then Extension & Counter Extension being made; The Tibia was pressed by an assistant, into its proper place, all that remained to be done was to guard against Inflammation. For this purpose, Rest, Low Diet, & Section, Leeches, Lead Water & Brandy have been recommended. Sometimes, we are called to see old Luxations, where the Patient is deprived of all motion of the Part. Yet we might inform, that he would on some future day recover the use of his Limb. I once related a Case of this kind to you, where the Old Acetabulum was completely done away, & a new one formed, by the pressure of the Head of the Os Femoris upon the Ilium.

Sprains.

A sprain is a forcible extension of one side of the Capsular Ligament, by the Head of the Bone partially rupturing it; and comes very near to a Luxation. Sprains most frequently occur at the Wrist, knee, & Ankle Joints, preserving the usual motion. A swelling & Echinymosis takes place immediately; owing to the rupture of some of the adjoining vessels.

Treatment. The Remedy we usually apply, is to pour a stream of the Coldest water on the affected part, or by keeping the part immersed in it. The action of this remedy is not easily explained; but I suppose that the vessels become small & do not effuse all the Blood that is discharged. The effusion continuing separates the ruptured parts & prevents an union. Cold stimulates to act or contract, which stopping the effusion, causes the parts to come nearer to each other. After the Remedy has been applied, the limb should be bound up. Soft Linnen wet with Vinegar or some kind of spirits, may be applied - & over this a Roller, taking care not to have it too tight above, or below the Sprain. If the Ankle should be affected the limb should be kept in a Horizontal posture. If the wrist, - keep it from motion, by applying splints to that & the whole fore-arm - If Pain appears very violent, an Opiate should be given. The Patient in these cases, always thinks the accident of too tripping a nature to be confined, and frequently Inflammation is brought on by using the limb, which frequently ends in Suppuration. I once saw a case of this kind where a Caric of the Bone followed a Suppuration & the Patient Died. Sprains of all kinds should meet our particular attention —

FINIS.

Letter C. Desault's splint; b.b. Bandage which makes counter Extension against the Tuberosity of the Ischium: & F. The Bandage around the Foot, and Ankle to make extension.

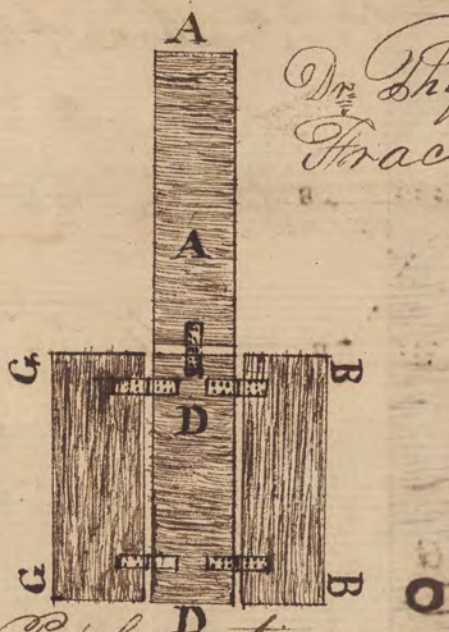


Dr. Physics & Hutchinsons improvement on Desault's splint, for oblique Fractures of the Os Femoris. C. The splint used by Desault - a. a. straight line represents the Axis of the Os Femoris. R. The Dotted line shew the addition made to the upper extremity of the Splint by Dr. Physics. S.S. The Bandage that makes Counter extension. H. The Block added by Hutchinson, to the lower end of the splint, and b. b. The extending Bandage passed round the ankle & over the middle of the Block; The upper end of which is excavated, so as to resemble the Head of a Butch, covered with a Cushion. The Counter Extension is made against the Axilla & the Tuberosity of the Ischium. It is sometimes necessary to remove the Bandage, in order to examine the Perineum. In this case the Extension, may be continued by making the whole of the

counter extension against the Axilla - The Obliquely extending & P. O. Extending Bandages, are thus considerably diminished

The letter
B.B. & C.
A.A. The
end of
the foot
last m
dified,
up & co
Plate

Dr. Shipick's
Fracture Box,
Laid Open.



Explanation.

The letters D.D. represent its proper bottom.
B.B. & C.C. represent its sides —
A.A. The False Bottom, with Hinges to the
ends of the Box, and is intended to elevate
the Foot, when necessary, without giving the
least motion to the limb. After the leg is
fixed, the lateral Boards may be pressed
up & confined by Tapes —

Plate 11th

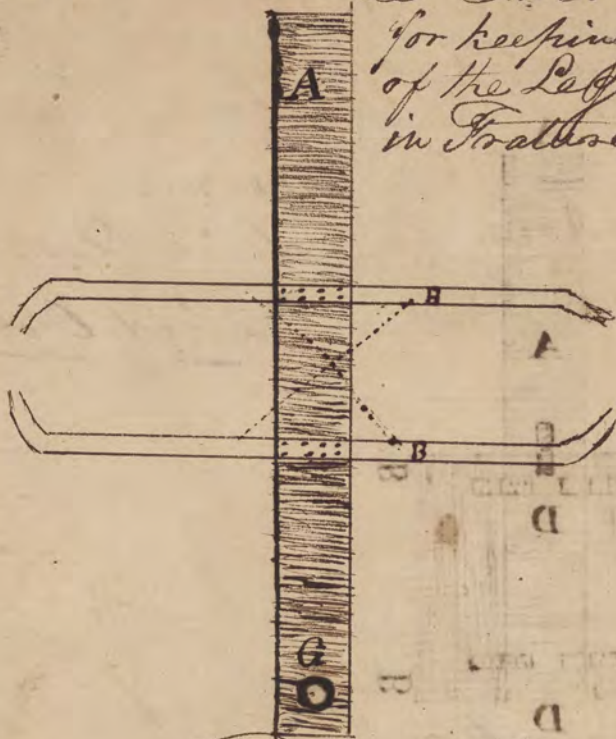
Explanation —

These splints should
be about 4 Inches wide
& long enough to reach
from the Knee, to some
distance below the Foot.
The upper end of each
has 4 holes. At the
lower end they are
connected by a cross
piece passed through
the Mortises —



Plate IV.

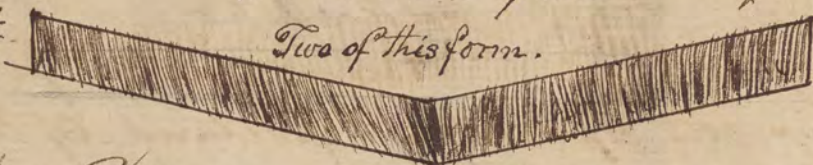
Dr. Amos Dorsey's Splint
for keeping up Extensions
of the Leg or knee Joint,
in Fractures of the Patella -



Explanation -

A, represents the Splint, which extends
from the Trochanter Minor to the Heel,
& applied Posteriorly to the Leg, after a
Bandage has been applied entirely
over the Limb, (from the Symphysis, to the
Ankle). Then the Bandages B. B. (which
are nailed to the Splint) should be bound
very tightly around the knee, & a circular
hole C, cut in such a part of the Splint, as
to fit the Heel -

Plate V. Dr. Phelps's Splint in cases of
Fracture of the Condyles of the Femur -
Fig 1st Two of this form.



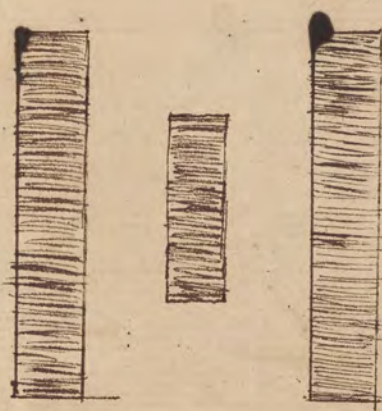
These Splints may all be made of Paste-
board, which when wet, adapt themselves
to the form of the Arm -

Fig 2nd

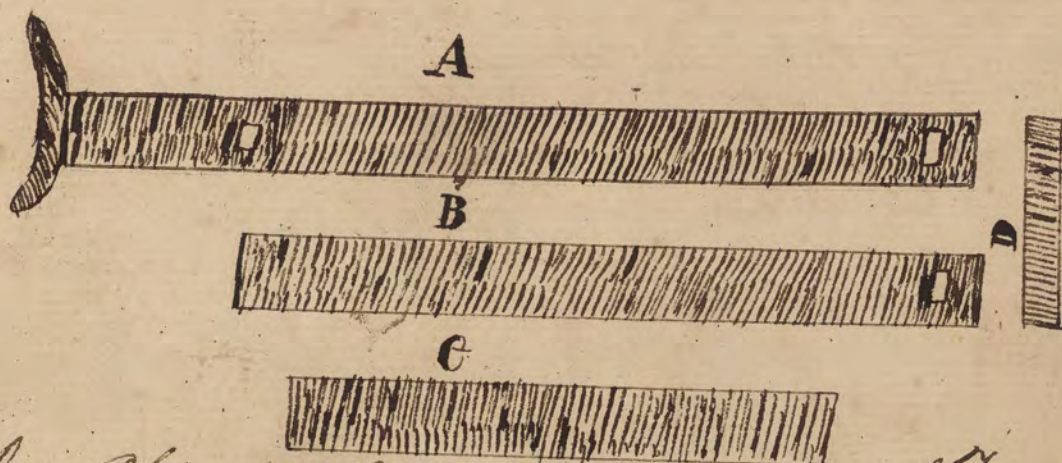


Dr Physick's Splint in cases of Fracture of the Humerus, above the Condyles - -

Fig 3^d



Splints which are commonly used in Fractures of the Humerus -



Dr Physick's Splints for a fractured of Humerus

Explanation

Letter A is the external Lateral Splint extending from the Axilla to four or five inches below the Foot, Letter B is the Internal Lateral Splint reaching from the Groin to the same distance as the external One it is then Connected with it by the Mortice D. Letter C is the Anterior

Splint reaching from the upper part of the Femur
to the upper part of the Patella — Extension is made
by a roller secured to the foot and bound tight to
the Mortar. A Counter Extension is applied by a roller
from the Submaxillary of the of Hyacinth and is fastened
to the Mortar in the upper part of the external Exten-
sion. The Splint extending against the Acetabulum
as for the Counter Extension — all the dressings required are
the Splints above described, Chap. Bags, Lining, bandages
of Straps, & Tapes to secure all four for the thigh and
thence for the leg —

Prescriptions, Nostrorum &c.

Pills.

Doctor Scott's famous Bilious Pills.

R. Merc. Dulcis ℥ij

Gum. Gutt. Gamb. ℥ij

Pulv. Convolv. Calap. ℥x

N^o 1st Gum. Aloes Socoth ℥ij

Vit. Tartarisation ℥iv

Sapo. Venet. ℥ij

Tart. Antimonii ℥ij

Syrup. D. Suff. fiat

in Mapa pro Pilula.

Pilula Nervosa.

R. Gum. Asafetida ℥i

Aloes Soc. ℥ij

N^o 2nd Castoreii ℥ij

Cupr. Ann. ℥ij

Syrup. D. Suff. ft in Pilula.

N^o 48 ad ℥ij

Pilula Hydrar. & Opio.

R. Sub. Mur. Hydrar. ℥i

N^o 3 Gum. Opio gr xv.

Conser. Rosa D. Suff

fiat in Pilula LX divid.

Pilula Praest.

R. Gum. Gutt. Gamb.

N^o 4th Sub. Mur. Hydr.

Vit. Tart. aa ℥i

Syr. D. Suff. fiat in Pil. N^o 44

Pilula Hydrar. Calcinati.

R. Merc. Calcini ℥ij

N^o 5th Gum. Guaiac. ℥ij

Opio ℥i

Conser. Rosa D. Suff. fiat

in Pilula N^o 240.

Unus Capendus mane et

Nocte

Pilul. pro Setero.

R. Tart. Antimonii gr v

N^o 6th Sapo. Veneta ℥ij

Syrup. D. Suff. in ft in

Pilul. quarum Sumat ij mane

et Nocte. These Pills have

an excellent effect in cases of

Dauudice & other Pelious affections

Pilul. Tonic.

R. Chalyb. ppt. ℥i

N^o 7th Gum. Myrrha ℥ij

Asafetida ℥ij

N^o 8th Sapo. Venet. ℥ij

Soup. D. Suff. in Pilula divid.

Pilul. Expectorans.

R. Pulv. Rad. Scilla. ℥i

N^o 9th Zingiber ℥ij

Gum. Ann. ℥ij

Sapo. Veneta ℥ij

Syrup. D. Suff. in ft in Pilulas.

quarum Sumat ij vel iv bis in die.

Pilul. pro Morb. Regio.

R. Tart. Antimonii gr ij

Mercurius dulcis ℥ij

N^o 10th Sapo. Veneta ℥i

Pulv. Rad. Rhatarb. ℥i

Syrup. D. Suff. in ft in Mapa pro

Pilula 50. To be taken as recom-

mended above. see Setero.

Pilul. Terebinthina.

R. Gum. Arab. ℥ij

N^o 11th Sapo. Veneta ℥i

Tereb. Veneta D. Suff. in ft

in Pilula

Pilul. Deobstruent.

R. Gum. Asafetida

N^o 12th Gum. Myrrha ℥ij

Chalyb. ppt. aa ℥i

Gum. Aloes ℥ij

in ft in Pilula

Pills

Pilul. pro Tinea Capitis
 ℞ Gum. Opio gr ij
 12) Guaiacae Zi
 Mercurius Dulcis gr iij
 Sulph. Aur. Antim. gr iij
 Syrup. D. Suff. M ft. in Pil. n^o 12
 Capiendo omnia nocte

Pilul. Deconstuent.
 ℞. Chalybs. ppt. Zi
 13th) Pulv. Galla Zi
 — Rhei Zi
 — Zingiber aa Zi
 M ft. in Pilula n^o 100, quarum
 sumat iv bis in die

Pilul. Alterat.
 ℞. Sub. Murias. Hydr. Zi
 14) Gum. Opii gr iij
 Concer. Rosa. q. suff
 M ft. in Pilula n^o 60 divid.

Pilul. Laxatives
 ℞. Gum. Aloes. Soc.
 15) Sapo. Veneta aa $\frac{3}{4}$
 Tart. Antim. gr v
 M ft. in Pilula. sumat iv vel v
 omnia nocte

Pilul. Alterat.
 ℞. Gum. Opii gr iij
 16) Sub. Murias. Hydrar. Zi
 Pulv. Rad. Scilla Zi
 Pulv. Sal. Ann. Cr. Zi
 Syrup. D. Suff. M ft. in Pilul.
 n^o 80 dividend.

Pilul. pro Dysuria
 ℞. Gum. Arab
 17) Sapo. Veneta Zi
 Sal. Soda aa Zi
 Syrup. D. Suff. M ft. in Pilula.
 vel.

℞. Tart. Antim gr iv
 — Pulv. Rhei Zi
 18) Sapo. Venet st
 Sal. Soda aa Zi
 Solut. Sal. Soda D. Suff.
 M ft. Pilula

Pilul. pro Steno
 ℞. Tart. Antim gr v
 — Pulv. Rhei Zi
 19) Sapo. Venet. Zi
 Sal. Diuret. Zi
 Syrup. D. Suff. M ft. in Pilula

Bolus Antirheumatic. Boluses.

R. Gum. Guaiac. -

Sal. Nitri ppt
1) *- Ann. bol. aa Zi*

Gum. Opii gr iij
Syrup. 2. Suff. pt in Bolus
noij. & in vino. quarum
sanat unum quaque Sept. vel
octis horis -

These Boluses are frequently
used in Inflammatory Rheu-
matism -

Bolus Antirheumatic.

R. Gum. Opii gr iij

Sal. Nitri ppt. Zi
2) *- Ann. bol. Zi*

Gum. Camph. Zi
Syrup. 2. Suff. pt in Bolus
noij. deo. cap. unus omnis
nocte in aqua -

Vel.

R. Gum. Opii gr i

Sal. Nitri Zi
3) *- G.C. bol. Zi*

Gum. Guaiac. Zi

Syrup. 2. Suff. in Bolus.
noij. deo -

Vel.

R. Gum. Opii gr iij

Camph. Zi

4) *Sal. Nitri ppt. 3. Zi*

- Ann. bol. Zi

Gum. Guaiac. Zi

Syrup. 2. Suff. pt in Bolus

noij. deo -

Powders.

Pulv. Saline, pro Dysenteria
 ℞. Pulv. Sal. Gland. ℥ij
 Tart. Antim. gr. iij
 Pulv. Rad. Sant. rub. gr. iij
 Dissolve in One pint of hot
 water & take One table spoon
 full every three hours —

Pulv. Alterativus —
 ℞. Merc. Dulcis
 Pulv. Rad. Scilla aa gr. xij
 Sal. Nitri ppt. — ℥ij
 Mst in Chantula moy^d divid
 One every four hours in Honey
 or a thick Syrup —

℞. Merc. Dulcis Di^{ss}olv^{it}
 Pulv. Rad. Scilla ℥ss
 Sal. Amm. Cr. ℥ij
 Mst in Pulvis. Chart. moy^d divid
 One Morning & Evening —

Pulv. Astringens, pro Abort.
 ℞. Sacch. Saturni gr. xij
 Sal. Nitri — ℥ij
 Coccinella — gr. iij
 Mst in Pulv. Chart. moy^d divid
 One every two hours —

Pulvis, pro Febri Intermitte^{nt}.
 Pulv. Cort. Peruv. ℥ss
 Pulv. Rad. Scorp. Ling. ℥ss
 Sal. Tartari — ℥ij
 Mst in Pulv. Chart. moy^d divid
 One to be taken in a
 glass of wine two hours before
 the shake comes on —

Ung. Basil. flava. Ointments.

Ung. Basil. flava. *℞i*
℞. Cera. Flav. --- *℞i*
 Resina. Flav. --- *℞i*
 Myungia Torcuna aa *℞i*
 Terab. Venela --- *℞i*
 In. in Ung. ---

Ung. Praecip. Rub. ---
℞. Pulv. Merc. praecip. *℞i*
 Alb. *℞i*
 More. Corasiv. Sublim *℞i*
 Terab. Venela *℞i*
 Myungia Torcuna *℞i*
 In. in Ung. ---

Ung. Saturninum ---
℞. Sacch. Plumbi *℞i*
 Cera Alba *℞i*
 Ol. Dulcis *℞i*
 In. in Ung. ---

Cerate. Epulot.
℞. a. Apis Calummaris
 Cera. Flava
 Chusp. Diach. Simp. aa *℞i*
 Myungia Torcuna *℞i*
 In. in Ung. ---

Ung. Digestivus ---
℞. Ung. Basil. fl. *℞i*
 Mercurius pra. sub. *℞i*
 In. in Unguentum ---

Ung. Praecip. Alb. ---
℞. Mercu. pra. alb. *℞i*
 Myung. Torcuna *℞i*
 In. in Unguentum ---

Ung. pro Ectanus ---
℞. Mercur. pra. alb. *℞i*
 Mor. Pulph. *℞i*
 Sal. Nitri aa *℞i*
 Gum. Benzoin *℞i*
 Myung. Torcuna *℞i*
 In. in Ung. ---

Ung. Discutiens ---
℞. Linseed. Oil. --- *℞i*
 Ol. Dulcis --- *℞i*
 Boil in a Skillet, until it
 attains the consistency of paste
 then add *℞i* of red lead ---
 It must be continually be
 stirred, until it becomes of
 the consistency of putty. Then
 pour more it in cold water
 & work it into a ball for use.
 This ointment is useful in
 all kinds of foul ulcers, white
 swellings, fresh wounds, swellings
 in the mammae &c. In foul
 ulcers an astringent poultice
 ought to be applied first ---

Ung. pro Hemorrhoids ---
℞. Gum. Diachyl. *℞i*
 Ol. Dulc. Opt. *℞i*
 Acid. Vini opt. aa *℞i*
 In. in Ung. ---
 Melt the Diachylon & oil
 together put into a bowl &
 add the vinegar previously
 made warm to them then beat
 with a spoon into a fine light
 ointment ---

Ung. pro Labiis ---
℞. Gum. Psti. *℞i*
 Cera. Alba --- *℞i*
 Rad. Anchusa. *℞i*
 Balsam. Peruv. gutt. *℞i*
 Ep. Lemonis --- gutt. *℞i*
 In. in Ung. ---

Ung. pro Vulnibus utione factum.
℞. Ung. Basil. flava. --- *℞i*
 Ol. Torabinth. --- *℞i*
 Ol. Dulcis Opt. --- *℞i*
 First melt the Basilicon &
 then add the other ingredients
 This is called Rhenish ointment

Ointments.

Ointment
of St. John's
St. John's
St. John's

Ointment
of St. John's
St. John's
St. John's

Ointment
of St. John's
St. John's
St. John's

Liniments. & Balsams.

Linimentum Volat -
 ℞. Ol. Dulcis - - - ℥ij
 Spt. C. C. Volat. ℥ij
 M. f. Linimentum -

Linimentum Saponis -
 ℞. Sapo. Veneta ℥ij
 Gum. Camph. ℥i
 Rill Triticum ℥i
 M. f. Linimentum.

Liniment. pro Oculis -
 ℞. Merc. Sule. levigat ℥i
 Extract. Saturni ℥i
 Ol. Olive opt. ℥i
 M. f. Liniment. - - - - -

Balsam. Anodynus -
 ℞. Gum. Opii - ℥i
 Wapo. Veneta - ℥iv
 Gum. Camph. ℥ij
 Ol. Rosmary - ℥ss
 Spt. Vini. Rect. ℥ij

Digest the Opium & Soap for
 three days, then to the strained
 liquor add the Camphor & Oil
 diligently shaking the vessel.

Turbingtons Balsam -
 ℞. Balsam. Peruv. ℥ss
 Tolut. aa ℥ss
 Gum. Benjamin ℥ss
 Calamus. Aromat. ℥ss
 Gum. Lang. Drac. ℥i
 — Aloes. Soc. ℥ij
 — Thura - aa ℥ij
 Spt. Vini. Rect. ℥ij

Put all the Ingredients into
 a bottle & stop close. Let it
 boil gently in water until
 the whole is dissolved, which
 will take two, or three days -

132.00
 22.00
 6.

Dr. 442.00
 150.00
 \$ 592.00

Exp. 50.00
 Exp. 50.00
 Board, 22.00
 40.00
 198.00

Exp. 18.00
 Board, 22.00
 Exp. 20.00
 104.00

Adm. 800.00
 Exp. 300.00
 100.00
 592.00
 106.00

Adieu

24th

London

Monday

Aug 1

Dear

My dear

Friend



Drum
Lytton
New
Wye
Bridg
Lytton
24th
Bridg

18
3
1854/3
48
6

$$\begin{array}{r}
 18 \\
 3 \\
 \hline
 54 \\
 13 \\
 \hline
 48 \\
 6 \\
 \hline
 \end{array}$$

18

3

54

13

48

6

18

3

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